Self Diagnosis
Supported model

SERVICE MANUAL

BA-5 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.
KV-27FV16	RM-Y171	US	SCC-S40K-A
KV-27FV16	RM-Y171	CND	SCC-S41J-A
KV-29FV16	RM-Y171	E	SCC-S38Q-A
KV-29FV16C	RM-Y171	E	SCC-S38R-A
KV-32FS12	RM-Y168	US	SCC-S40F-A
KV-32FS12	RM-Y168	CND	SCC-S41F-A
KV-32FS16	RM-Y169	US	SCC-S40G-A
KV-32FS16	RM-Y169	CND	SCC-S41G-A

KV-27FV16

RM-Y171

TRINITRON® COLOR TV

SONY®

SPECIFICATIONS

		KV-27FV16	KV-29FV16 KV-29FV16C	KV-32FS12	KV-32FS16
Power requirements		120V, 60 Hz	120-220V, 50/60Hz	120V, 60 Hz	120V, 60 Hz
Number of inputs/outputs					
	Video 1)	3	3	3	3
	S Video 2)	2	2	1	1
	Audio 3)	3	3	3	3
	Audio Out 4)	1	1	1	1
	Y, P_B, P_R 5)	1	1	1	1
	Monitor Out	1	1	--	--
Speaker output(W)		15Wx2	15Wx2	5Wx2	5Wx2
Power Consumption(W)					
	In use(Max)	220W	220W	165W	170W
	In standby	1W	1W	1W	1W
Dimensions(W/H/D)					
	(mm)	762 x 604 x 519 mm	762 x 604 x 519 mm	800 x 704 x 582 mm	800 x 704 x 582 mm
	(in)	30 x $23^{7/8}$ x $20^{1/2}$ in.	30 x $23^{7/8}$ x $20^{1/2}$ in.	$31^{1/2}$ x $27^{3/4}$ x 23 in.	$31^{1/2}$ x $27^{3/4}$ x 23 in.
Mass					
	(kg)	49 kg.	49 kg.	74 kg.	74 kg.
	(lbs)	107 lbs. 13 oz.	107 lbs. 13 oz.	162 lbs. 13 oz.	162 lbs. 13 oz.

1) 1 Vp-p 75 ohms unbalanced, sync negative
2) Y: 1 Vp-p 75 ohms unbalanced, sync negative
   C: 0.286 Vp-p (Burst signal), 75 ohms
3) 500mVrms (100% modulation), impedance: 47kilohms
4) More than 408 mVrms at the maximum volume setting (variable)
   More than 408 mVrms (fix)
5) Y: 1.0 Vp-p, 75 ohms, sync negative; PB: 0.7 Vp-p, 75 ohms;
   PR: Vp-p, 75 ohms

Television system

American TV standard/NTSC

Channel coverage

VHF:2-13/UHF:14-69/CATV:1-125

Visible screen size

27” picture measured diagonally (KV-27FV16/29FV16/29FV16C ONLY)
32” picture measured diagonally (KV-32FS12/32FS16 ONLY)

Actual screen size

29” picture measured diagonally (KV-27FV16/29FV16/29FV16C ONLY)
34” picture measured diagonally (KV-32FS12/32FS16 ONLY)

Antenna

75 ohm external antenna terminal for VHF/UHF

Supplied accessories

Remote Commander RM-Y168 (KV-32FS12 ONLY)
Remote Commander RM-Y169 (KV-32FS16 ONLY)
Remote Commander RM-Y171 (KV-27FV16/29FV16/29FV16C ONLY)
Size AA (R6) batteries (2)

Optional accessories

Connecting cables: VMC-810S/820S, VMC-720M,
YC-15V/30V, RK74A
U/V mixer EAC-66
TV Stand: SU27FD3 (KV-27FV16/32FS12/32FS16 ONLY)

Design and specifications are subject to change without notice.

(●) SRS (SOUND RETREIVAL SYSTEM)

The **(●)** SRS (SOUND RETREIVAL SYSTEM) is manufactured by Sony Corporation under license from SRS Labs, Inc. It is covered by U.S. Patent No. 4,748,669. Other U.S. and foreign patents pending.

The word “SRS” and the SRS symbol **(●)** are registered trademarks of SRS Labs, Inc.

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WARNINGS AND CAUTIONS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS, AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RESQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE!!

LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSEES ET LES LISTES DE PIECES SONT D'UNEIMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMERO DE PIECE EST INDIQUE DANS LE PRESENT MANUEL OU DANS DES SUPPLEMENTS PUBLIES PAR SONY. LES REGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRESENT MANUEL. SUIVRE CES PROCEDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONTIONNEMENT SUSPECTE.

SELF-DIAGNOSTIC FUNCTION

The units in this manual contain a self-diagnostic function. If an error occurs, the STANDBY/TIMER LED will automatically begin to flash. The number of times the LED flashes translates to a probable source of the problem. A definition of the STANDBY/TIMER LED flash indicators is listed in the instruction manual for the user’s knowledge and reference. If an error symptom cannot be reproduced, the Remote Commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

Diagnostic Test Indicators

When an error occurs, the STANDBY/TIMER LED will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the LED will identify the first of the problem areas.

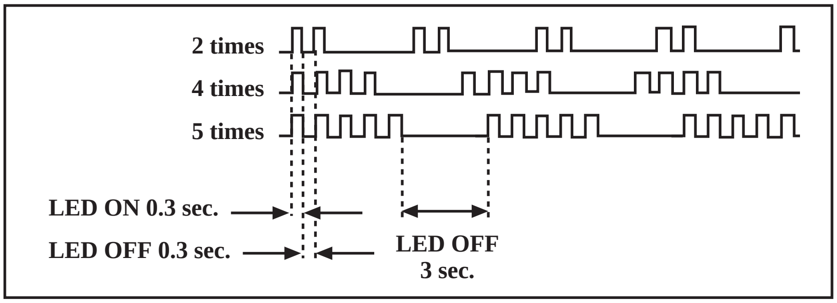
Results for all of the following diagnostic items are displayed on screen. No error has occurred if the screen displays a “0”.

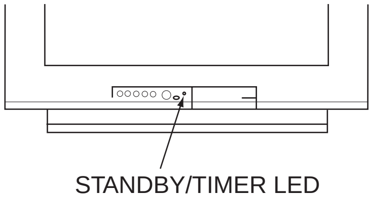
Diagnostic Item Description	No. of Times STANDBY/TIMER LED Flashes	Self-Diagnostic Display/ Diagnostic Result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out. (F601) (A Board)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1	• H.OUT (Q502) is shorted. (A Board) • IC702 is shorted. (CA Board)	• Power does not come on. • Load on power line is shorted.
I-Prot	4 times	4:0 or 4:1	• +13V is not supplied. (A Board) • IC502 is faulty. (A Board)	• Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Power line is shorted or power supply is stopped.
IK	5 times	5:0 or 5:1	• Video OUT (IC502) is faulty. (A Board) • IC301 is faulty. (MA Board) • Screen (G2) is improperly adjusted.**	• No raster is generated. • CRT cathode current detection reference pulse output is small.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.

** Refer to Screen (G2) Adjustments in Section 3-4 of this manual.

Display of Standby/Timer LED Flash Count





Diagnostic Item	Flash Count*
+B overcurrent	2 times
I-Prot	4 times
IK	5 times

*One flash count is not used for self-diagnostic.

Stopping the Standby/Timer LED Flash

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY/TIMER LAMP from flashing.

Self-Diagnostic Screen Display

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

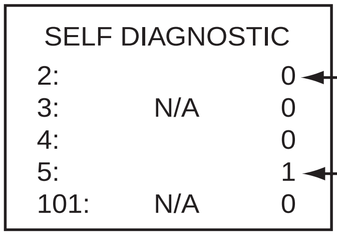
To Bring Up Screen Test

In standby mode, press buttons on the Remote Commander sequentially, in rapid succession, as shown below:

Display → Channel 5 → Sound volume – → Power ON

Note that this differs from entering the service mode (sound volume +).

Self-Diagnostic Screen Display



```
SELF DIAGNOSTIC
2:              0
3:      N/A     0
4:              0
5:              1
101:    N/A     0
```

Numeral “0” means that no fault was detected.

Numeral “1” means a fault was detected one time only.

Handling of Self-Diagnostic Screen Display

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to "0".

Unless the result display is cleared to "0", the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

Clearing the Result Display

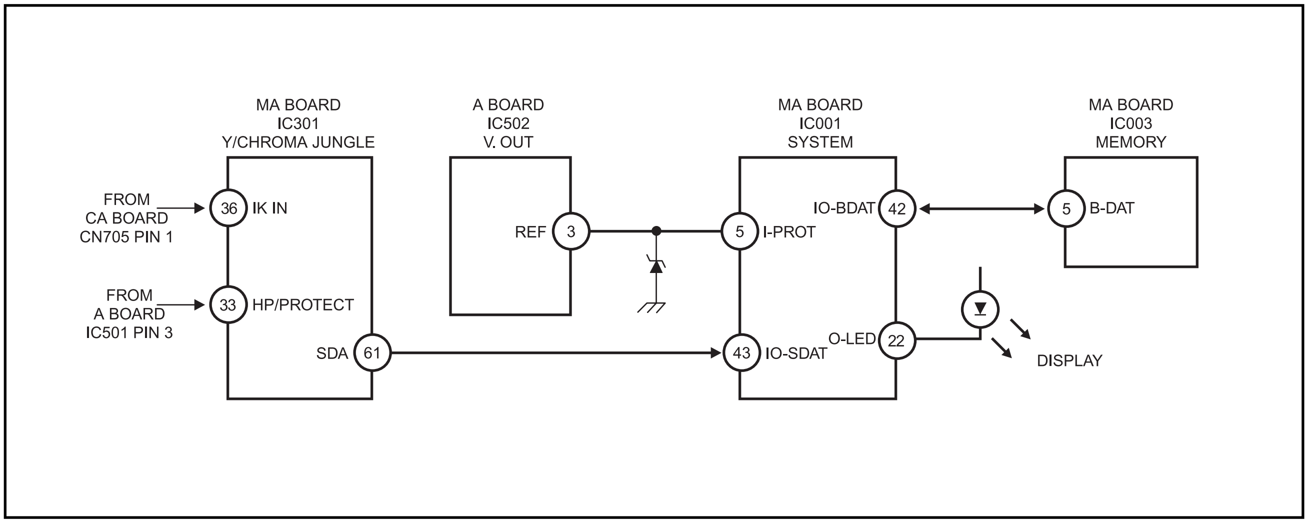
To clear the result display to "0", press buttons on the Remote Commander sequentially when the diagnostic screen is displayed, as shown below:

Channel 8 ➡ ENTER

Quitting the Self-Diagnostic Screen

To quit the entire self-diagnostic screen, turn off the power switch on the Remote Commander or the main unit.

Self-Diagnostic Circuit



+B overcurrent (OCP)	Occurs when an overcurrent on the +B (135V) line is detected by pin 33 of IC301 (MA Board). If the voltage of pin 33 of IC301 (MA Board) is less than 1V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.
I-Prot	Occurs when an absence of the vertical deflection pulse is detected by pin 5 of IC001 (MA Board). Power supply will shut down when waveform interval exceeds 2 seconds.
IK	If the RGB levels* do not balance within 2 seconds after the power is turned on, this error will be detected by IC301 (MA Board). TV will stay on, but there will be no picture. *(Refers to the RGB levels of the AKB detection Ref pulse that detects 1K).

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or touching high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

Leakage Test

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instructions.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low voltage scale. The Simpson's 250 and Sanwa SH-63TRD are examples of passive VOMs that are suitable. Nearly all battery-operated digital multimeters that have a 2 VAC range are suitable (see Figure A).

How to Find a Good Earth Ground

A cold-water pipe is a guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60- to 100-watt trouble- light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side on the line; the lamp should light at normal brilliance if the screw is at ground potential (see Figure B).

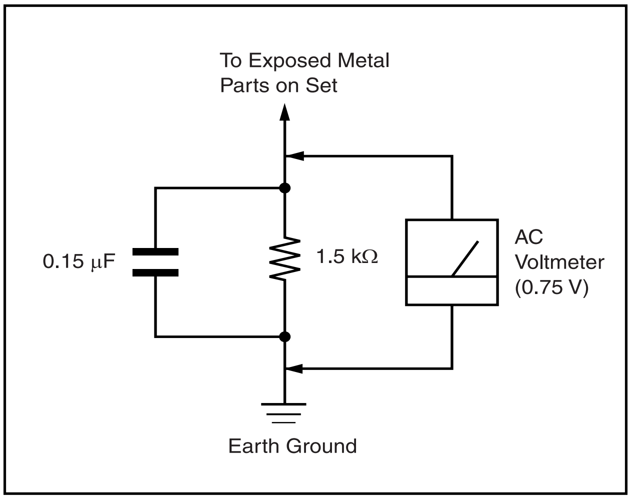


Figure A. Using an AC voltmeter to check AC leakage.

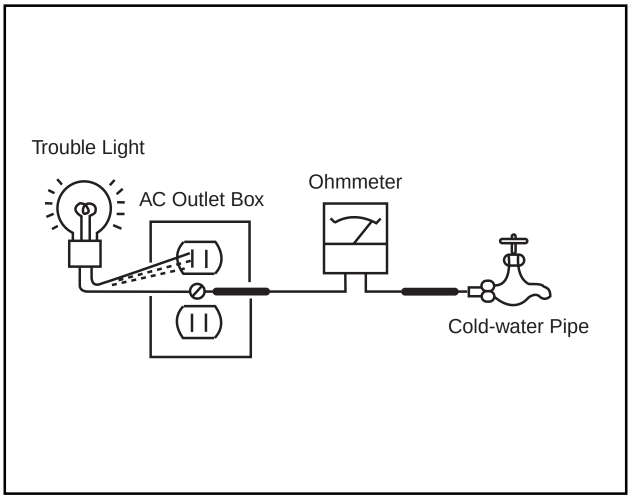


Figure B. Checking for earth ground.

The instructions mentioned here are partial abstracts from the Operating Instruction Manual.
The page numbers shown reflect those of the Operating Instruction Manual.

Connecting Your TV

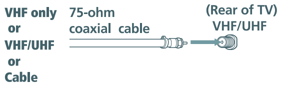
Read this chapter before setting up your TV for the first time. This section covers basic connections in addition to any optional equipment you may be connecting.

Basic Connections

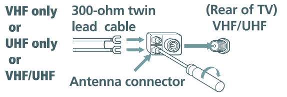
TV with indoor or outdoor antenna, or CATV cable

Depending on the cable available in your home, choose one of the connections below:

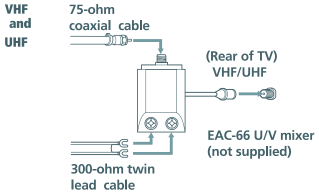
A



B



C

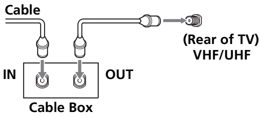


✍ If you are connecting to an indoor or outdoor antenna, you may need to adjust the orientation of the antenna for best reception.

Cable Box Connections

Some pay cable TV systems to use scrambled or encoded signals that require a cable box to view all channels.

Cable Box

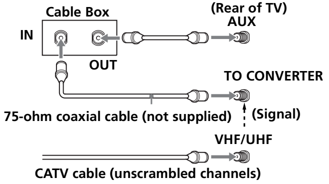


1. Connect the coaxial cable from your cable service to the IN jack on your cable box.
2. Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF jack on your TV.

✍ If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).

Cable Box and Cable

For this set up, you can switch between scramble channels (through your cable box), and normal (CATV) channels by using the ANT button.


Cable Box
(Rear of TV)
AUX
IN
OUT
TO CONVERTER
75-ohm coaxial cable (not supplied)
(Signal)
VHF/UHF
CATV cable (unscrambled channels)

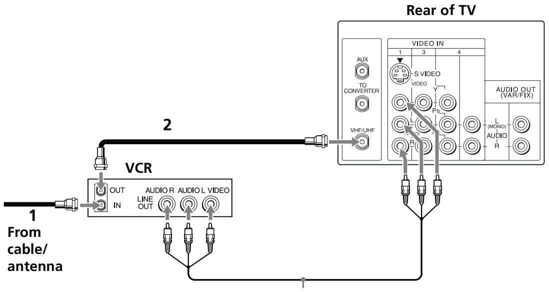
✍ If you are connecting a cable box through the AUX input and would like to switch between the AUX and normal (CATV) input, you should consider using the Channel Fix feature, (see page 26).

✍ Your Sony remote control can be programmed to operate your cable box, (see page 36).

✍ When using PIP, you cannot view the AUX input in the window picture.

Connecting Additional Equipment

TV and VCR



3 (Optional connection)

1 Connect the coaxial cable from your TV antenna or cable service to the IN jack on your VCR.

2 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.

✍ To watch video programs from your VCR, tune your TV to channel 3 or 4 (as set on the rear of your VCR).

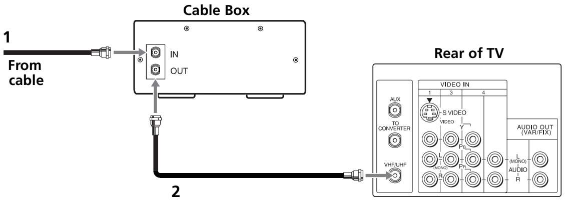
(Optional connection)

3 If your VCR is equipped with video outputs, you can get better picture quality by connecting A/V cables (not supplied) from AUDIO and VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV.

✍ For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

✍ You can use the TV/VIDEO button to switch between the VHF/UHF and VIDEO inputs.

TV and Cable Box



1 Connect the coaxial cable from your cable service to the IN jack on your cable box.

2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the VHF/UHF jack on the TV.

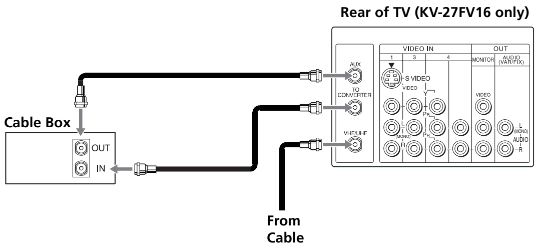
✍ To view channels from your cable box, tune your TV to channel 3 or 4 (as set on the rear panel of your cable box) and use the cable box's remote control to change channels.

✍ If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).

TV, Cable box, and Cable

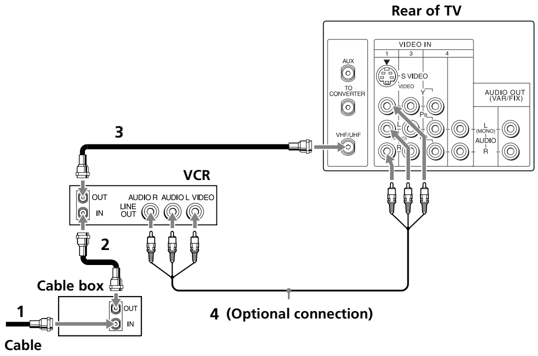
KV-27FS16, KV-27FV16, KV-32FS16, KV-29FV16 only

For this set up, you can switch between scrambled channels (through your cable box) and normal (CATV) channels by pressing ANT.



✍ When using PIP, the AUX input cannot be viewed in the window picture.

TV, VCR, and Cable box



1 Connect the coaxial cable from your cable service to the IN jack on your cable box.

2 Connect a coaxial cable (not supplied) from the OUT jack on your cable box to the IN jack on your VCR.

3 Connect a coaxial cable (not supplied) from the OUT jack on your VCR to the VHF/UHF jack on the TV.

✍ If you will be controlling all channel selection through your cable box, you should consider using the Channel Fix feature, (see page 26).

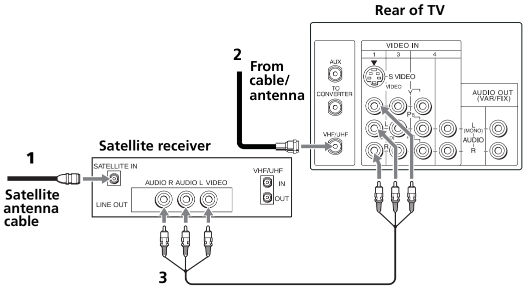
(Optional connection)

4 If your VCR is equipped with video outputs, you can get better picture quality by connecting A/V cables (not supplied) from AUDIO and VIDEO OUT on your VCR to AUDIO/VIDEO IN on your TV.

✍ For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

✍ You can use the TV/VIDEO button to switch between the VHF/UHF and VIDEO inputs.

TV and Satellite Receiver

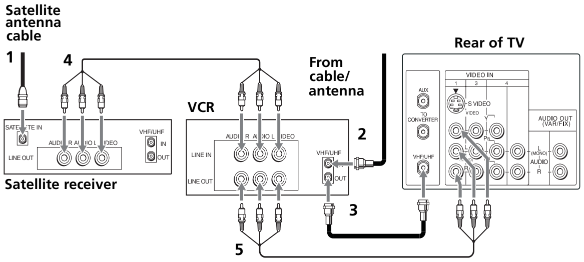


1. Connect the cable from your satellite antenna to SATELLITE IN on your satellite receiver.
2. Connect the coaxial cable from your cable or antenna to the VHF/UHF jack on your TV.
3. Using A/V cables, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your TV.

✍ For optimum picture quality, use S VIDEO instead of the yellow A/V cable. S VIDEO does not provide sound, the audio cables must still be connected.

✍ You can use the TV/VIDEO button to switch between the VHF/UHF and satellite receiver inputs.

TV, Satellite Receiver, and VCR



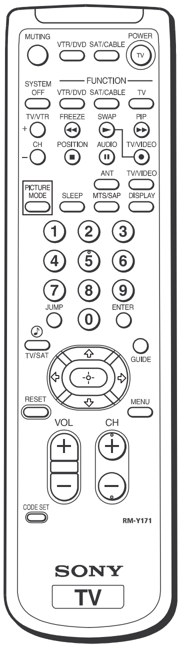
1. Connect the cable from your satellite antenna to SATELLITE IN on your satellite receiver.
2. Connect the coaxial cable from your cable or antenna to the IN jack on your VCR.
3. Using a coaxial cable, connect the OUT jack on your VCR to the VHF/UHF jack on your TV.
4. Using A/V cables, connect AUDIO and VIDEO OUT on your satellite receiver to AUDIO and VIDEO IN on your VCR.
5. Using A/V cables, connect AUDIO and VIDEO OUT on your VCR to AUDIO and VIDEO IN on your TV.

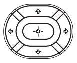
✍ To view from the satellite receiver or VCR, select the video input to which your satellite receiver or VCR is connected by pressing TV/VIDEO on the remote control.

Using the Remote Control and Basic Functions

This section shows you how to use the more advanced buttons on the remote control and how to use the on-screen menus.

Using the Remote Control



Button	Description
POWER	Press when you want to turn connected equipment on and off.
FUNCTION	Press when you want to control connected equipment with your remote control.
MUTING	Instantly turns off the sound. Press again or press VOL + to restore sound.
SYSTEM OFF	Powers off all Sony equipment at once, (may not work with older equipment).
TV/VIDEO	Cycles through available video inputs.
ANT	Press to change the VHF/UHF input to the AUX input (KV-27FS16, KV-27FV16, KV-32FS16 only).
TV/VTR	Press when you are finished using a VCR and you want to switch to the TV input. Your VCR power will remain on.
	Moves the cursor in the on-screen menus. Press the arrow buttons to move the cursor. Press the center button to select or access an option.
PICTURE MODE	Cycles through the available Video Mode settings.
SLEEP	Turns the TV off automatically in approximately 15, 30, 45, 60, 90, or 120 minutes. Cancel by pressing until SLEEP OFF appears.
MTS/SAP	Cycles through the Multi-channel TV Sound (MTS) options: Stereo, Mono, and Auto-SAP (Second Audio Programming).
DISPLAY	Press once to show current time, (if set) and channel number.
TV/SAT	Cycles through available Steady Sound settings, (see page 23).
JUMP	Alternates between the last two channels selected with the ⓪-⑨ buttons.
GUIDE	Brings up the custom guide of your satellite receiver.
MENU	Displays the on-screen menu. Press again to exit the menu at any time.
RESET	Press to return to factory settings while in an on-screen menu.
CODE SET	Use to program your remote control to operate connected video equipment, (see page 36).

✍ The remote control shown (RM-Y171) is for KV-27FV16. Your remote control may not look like the one illustrated.

✍ For information on Picture in Picture (PIP) operation buttons, see page 17.

✍ If you lost your remote control, see page 40.

Troubleshooting

If you are having a problem with your TV, try the suggestions below. If the problem persists, contact your nearest Sony dealer.

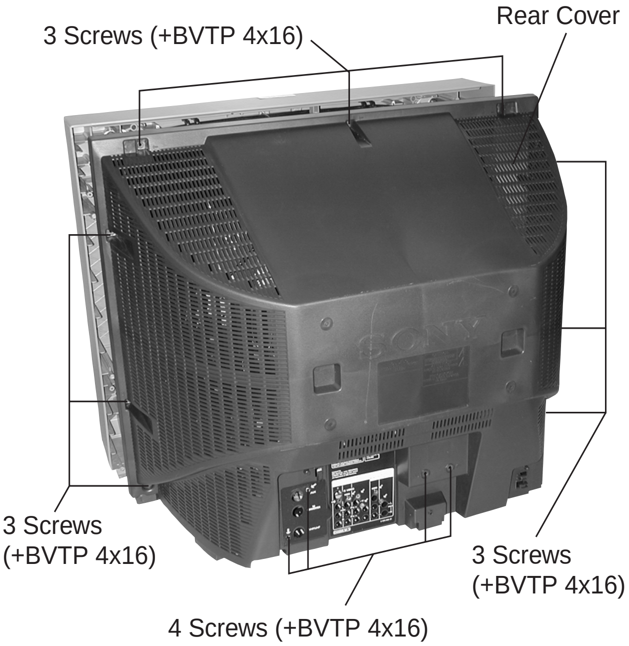
No picture, no sound	☐ Make sure the power cord is plugged in. ☐ If red light is flashing on the front of your TV for more than a few minutes, disconnect and reconnect the power cord to restore the TV. If the problem continues, call your local service center. ☐ Check the TV/VIDEO settings: when watching TV, set to TV; when watching video equipment, set to VIDEO (page 14). ☐ Make sure the batteries have been inserted correctly into the remote control (page 2). ☐ Try another channel, it could be station trouble.
Poor or no picture, good sound	☐ Adjust Picture in the Video menu (page 22). ☐ Adjust Brightness in the Video menu (page 22). ☐ Check the antenna and/or cable connections (page 3).
Good picture, no sound	☐ Press MUTING so that MUTING disappears from the screen (page 14). ☐ Check your Audio settings. Your TV may be set to Auto-SAP (page 24).
No color	☐ Adjust Color in the Video menu (page 22).
No signal	☐ Check the Cable setting in the Channel Setup menu (page 25). ☐ Check the antenna and/or cable connections (page 3). ☐ Make sure the channel selected is currently broadcasting.
Dotted lines or stripes	☐ Adjust the antenna. ☐ Move the TV away from other electronic equipment. Some electronic equipment can create electrical noise, which can interfere with TV reception.
Double images or ghosts	☐ Check your outdoor antenna or call your cable service.
Cannot receive higher number channels (UHF) when using an antenna	☐ Make sure Cable is set to OFF in the Channel Setup menu (page 25). ☐ Perform Auto Program to add channels that are not presently in the memory (page 16).
Cable stations don't seem to work	☐ Make sure Cable is set to ON in the Channel Setup menu (page 25). ☐ Perform Auto Program to add channels that are not presently in the memory (page 16).
Remote control does not operate	☐ Batteries could be weak. Replace them (page 2). ☐ Move the TV 3-4 feet away from fluorescent lights.
The TV needs to be cleaned	☐ Clean the TV with a soft dry cloth. Never use strong solvents such as thinner or benzine, which might damage the finish of the cabinet.
Lost password for Parental Control	☐ In the password screen, enter the following master password: 4357. After using the master password, you must create a new password, it cannot be used to unlock currently blocked channels.
You lost your remote control	☐ You can use the front A/V panel controls to access the menu. Press MENU to open the menu. Use the ⇧ or ⇩ buttons on the front A/V panel instead of the ⇧ or ⇩ buttons on the remote control. Use the ⊕ button on the front A/V panel instead of the ⇦, ⇨, and ⊕ buttons on the remote control. Press MENU again when the setting or adjustment is complete. Contact your nearest Sony dealer to order a replacement.
Cannot access other menus when using the Basic Menu	☐ If you use the MENU button to close the Basic menu, only the Basic menu appears when you press MENU again. To have access to the other menus, use the ⇩ button to select Advance Menu (page 35).

If, after reading these Operating Instructions, you have additional questions related to the use of your Sony television, please call our Direct Response Center at 1-800-222-SONY (7669) (U.S. residents only) or (416) 499-SONY (7669) (Canadian residents only).

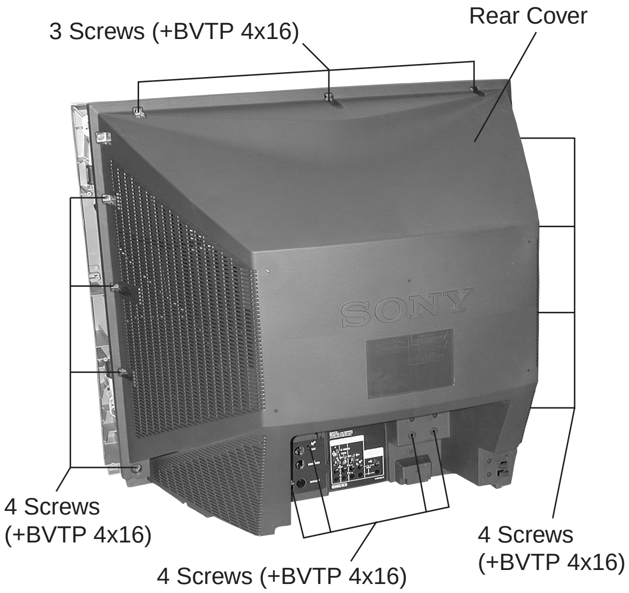
SECTION 2
DISASSEMBLY

2-1. REAR COVER REMOVAL

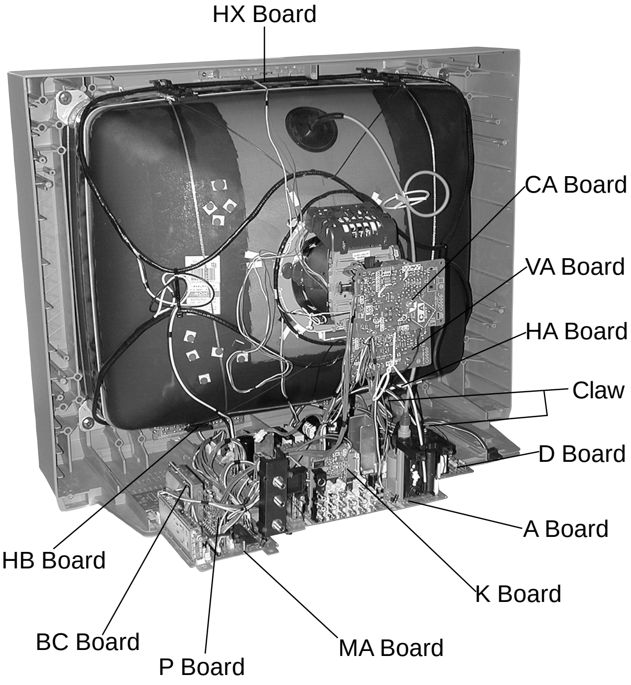
KV-27FV16/29FV16/29FV16C ONLY



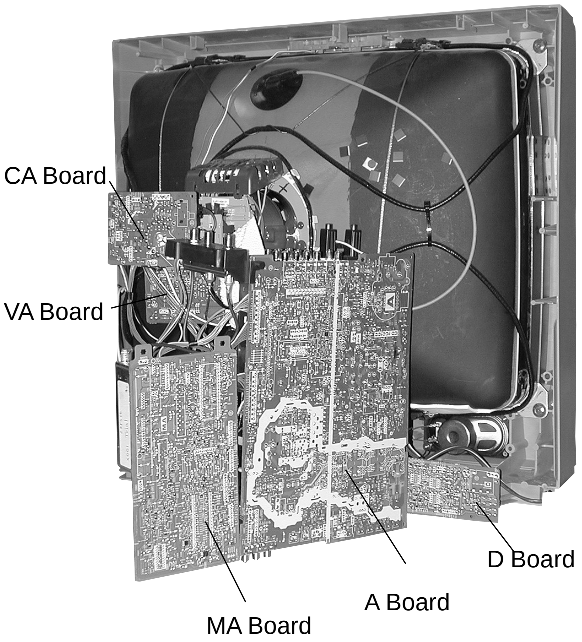
KV-32FS12/32FS16 ONLY



2-2. CHASSIS ASSEMBLY REMOVAL



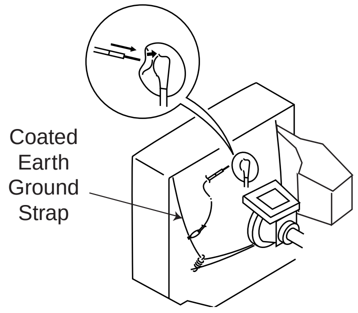
2-3. SERVICE POSITION

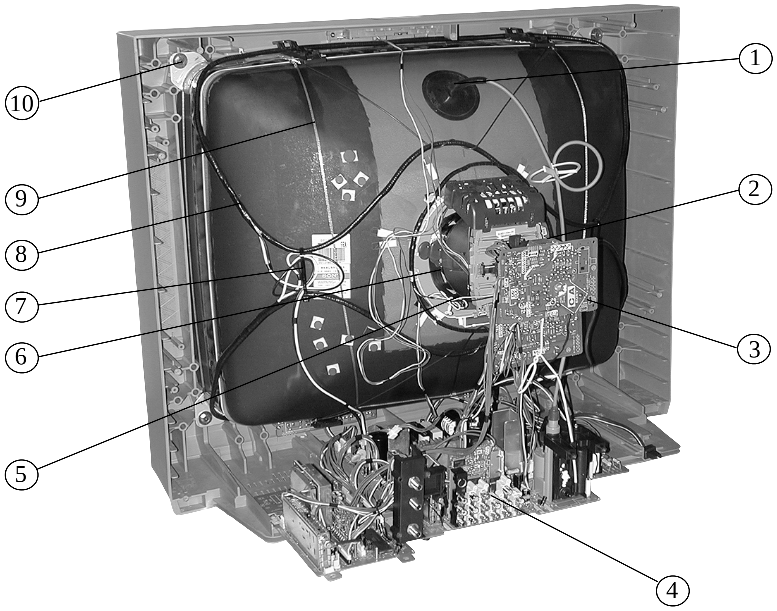


2-4. PICTURE TUBE REMOVAL

WARNING:
BEFORE REMOVING
THE ANODE CAP

High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT ***before*** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.





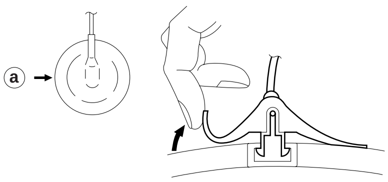
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the deflection yoke, neck assembly, degaussing coils and CRT grounding strap.
3. Remove the CA Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the neck assembly fixing screw and remove.
6. Loosen the deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the degaussing coil holders.
8. Remove the degaussing coils.
9. Remove the CRT grounding strap and spring tension devices.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT [Take care not to handle the CRT by the neck].

ANODE CAP REMOVAL

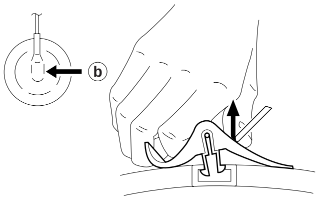
WARNING: High voltage remains in the CRT even after the power is disconnected. To avoid electrical shock, discharge the CRT **before** attempting to remove the anode cap. Short between anode and coated earth ground strap of CRT.

NOTE: After removing the anode, short circuit the anode of the picture tube and the anode cap to either the metal chassis, CRT shield, or carbon painted on the CRT.

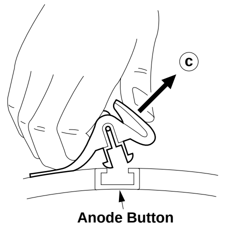
REMOVAL PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by arrow ⓐ.



② Use your thumb to pull the rubber cap firmly in the direction indicated by arrow ⓑ.



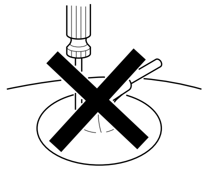
③ When one side of the rubber cap separates from the anode button, the anode cap can be removed by turning the rubber cap and pulling it in the direction of arrow ⓒ.

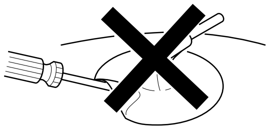
HOW TO HANDLE AN ANODE CAP

① Do not use sharp objects which may cause damage to the surface of the anode cap.

② To avoid damaging the anode cap, do not squeeze the rubber covering too hard. A material fitting called a shatter-hook terminal is built into the rubber.

③ Do not force turn the foot of the rubber cover. This may cause the shatter-hook terminal to protrude and damage the rubber.





SECTION 3
SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or when a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Set the controls as follows unless otherwise noted:

VIDEO MODE: STANDARD
PICTURE control: .... Normal
BRIGHTNESS control: .... Normal

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note: Test equipment required:

- Color Bar Pattern Generator
- Degausser
- DC Power Supply
- Digital Multimeter

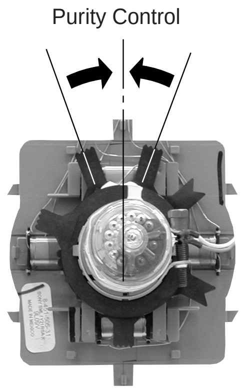
3-1. BEAM LANDING

Before beginning adjustment procedure:

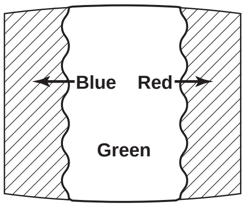
1. Degauss the entire screen.
2. Feed in the white pattern signal.

Adjustment Procedure

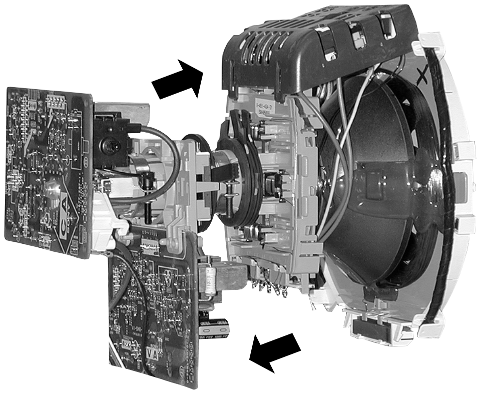
1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw and set the purity control to the center as shown below.



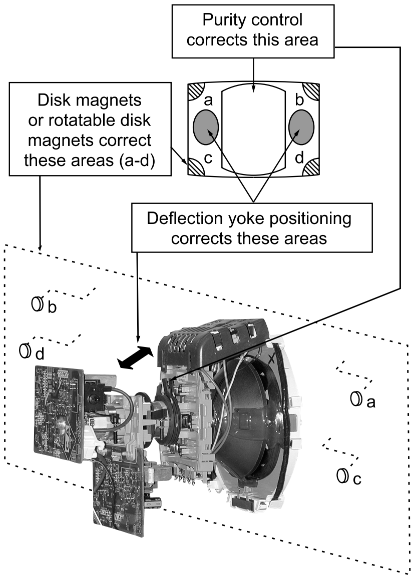
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward and adjust the purity control so that green is in the center and red and blue are at the sides evenly.



5. Move the deflection yoke forward and adjust so that the entire screen becomes green.



6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. If landing at the corner is not right, adjust by using the disk magnets.


Purity control corrects this area
Disk magnets or rotatable disk magnets correct these areas (a-d)
a
b
c
d
Deflection yoke positioning corrects these areas
b
d
a
c

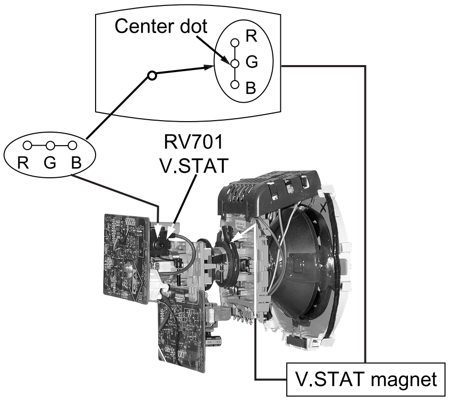
3-2. CONVERGENCE

Before starting convergence adjustments:

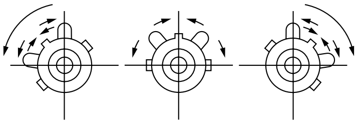
1. Perform FOCUS, V.LIN AND V.SIZE adjustments.
2. Set BRIGHTNESS control to minimum.
3. Feed in dot pattern.

Vertical Static Convergence

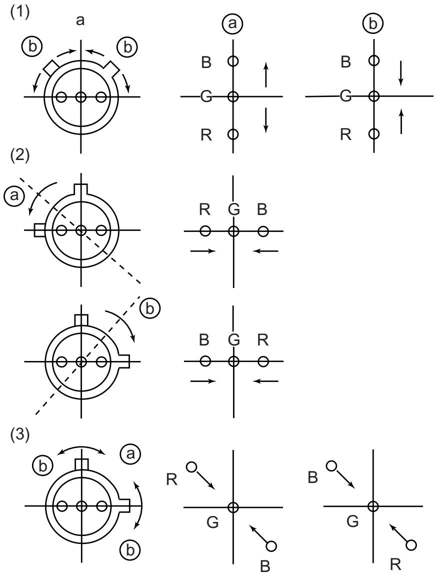
1. Adjust V.STAT magnet to converge red, green and blue dots in the center of the screen (Vertical movement adjust V.STAT RV 701 to converge).



2. Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



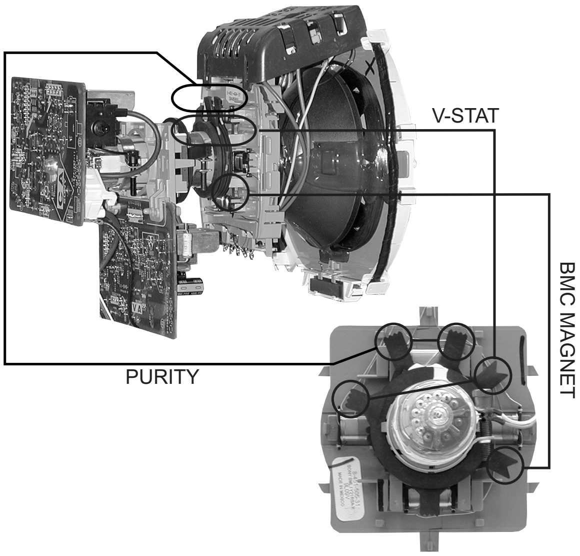
When the V.STAT magnet is moved in the direction of arrows a and b, red, green, and blue dots move as shown below:

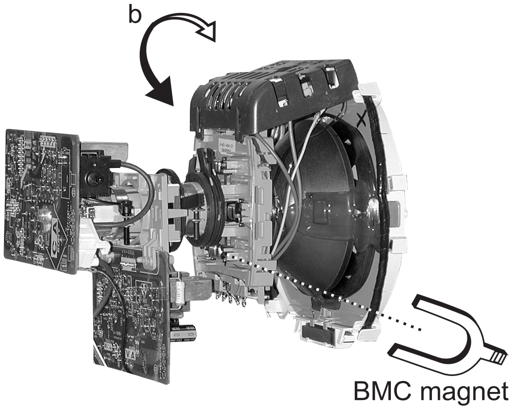


Horizontal Static Convergence

If the blue dot does not converge with the red and green dots, perform the following:

1. Move BMC magnet (a) to correct insufficient H. Static convergence.
2. Rotate BMC magnet (b) to correct insufficient V. Static convergence.
3. After adjusting the BMC magnet, repeat Beam Landing Adjustment.

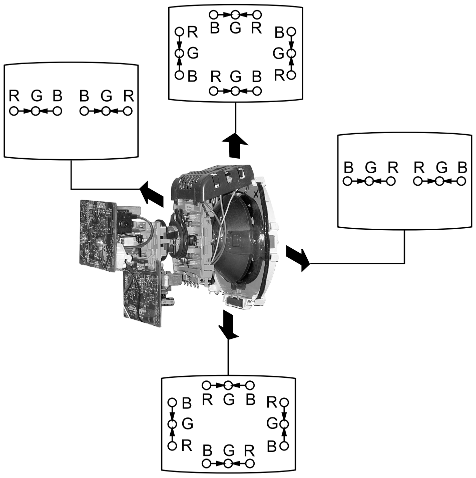




Dynamic Convergence Adjustment

Before performing this adjustment, perform Horizontal and Vertical Static Convergence Adjustment.

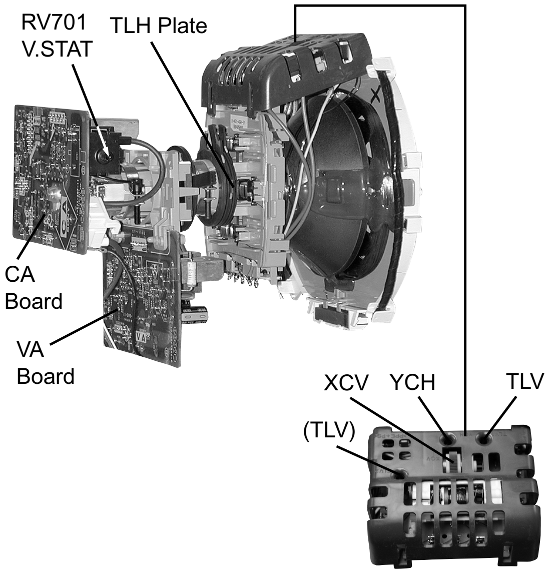
1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown on the following page.

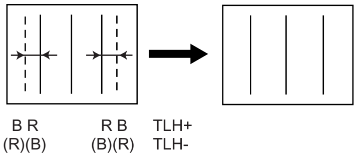


4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

TLH Plate Adjustment

1. Input crosshatch pattern.
2. Adjust PICTURE QUALITY to standard, PICTURE and BRIGHTNESS to 50%, and OTHER to standard.
3. Adjust the Horizontal Convergence of red and blue dots by tilting the TLH plate on the deflection yoke.



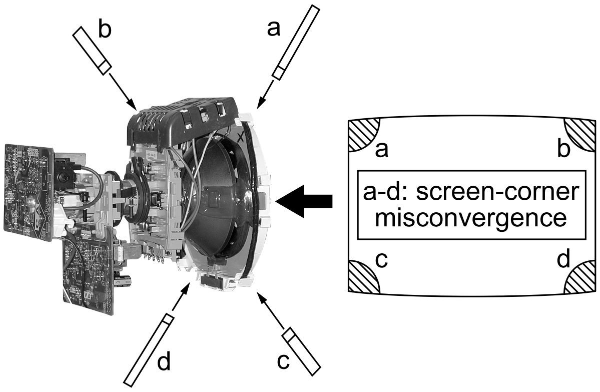


4. Adjust XCV core to balance X axis.
5. Adjust YCH VR to balance Y axis.
6. Adjust vertical red and blue convergence with V.TILT (TLV VR).

   Perform adjustments while tracking items 1 and 2.

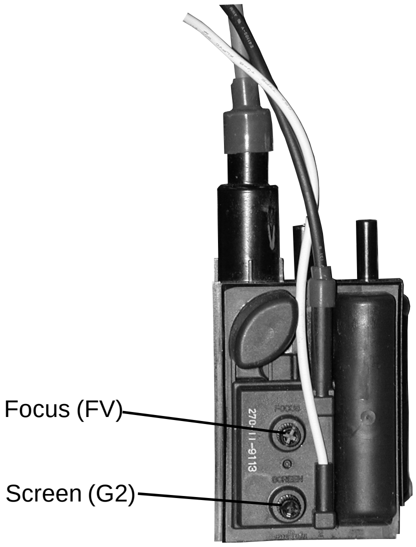
Screen-Corner Convergence

1. Affix a permalloy assembly corresponding to the misconverged areas.



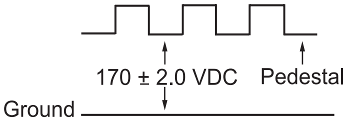
3-3. FOCUS

1. Adjust FOCUS control for best picture.



3-4. SCREEN (G2)

1. Input a dots pattern.
2. Set the PICTURE and BRIGHTNESS controls at minimum and COLOR control at normal.
3. Adjust SBRT, GCUT, BCUT in service mode with an oscilloscope as shown below so that voltages on the red, green, and blue cathodes are 170 ± 2.0 VDC.



4. Observe the screen and adjust SCREEN (G2) VR in FBT to obtain the faintly visible background of dot signal.

3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

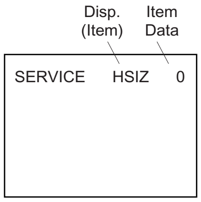
Service Mode Procedure

1. Standby mode (power off).
2. $\boxed{\text{Display}}$ → Channel $\boxed{5}$ → Sound volume $\boxed{+}$ → Power

   on the Remote Commander (press each button within a second).

Service Adjustment Mode In

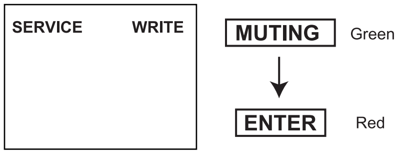
1. The CRT displays the item being adjusted.



2. Press $\boxed{1}$ or $\boxed{4}$ on the Remote Commander to select the item.
3. Press $\boxed{3}$ or $\boxed{6}$ on the Remote Commander to change the data.
4. Press $\boxed{\text{MUTING}}$ then $\boxed{\text{ENTER}}$ to save into the memory.

Service Adjustment Mode Memory

Turn set off then on to exit service adjustment mode.



3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal with burst.
2. Set to Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Adjust with SBRT if necessary.
5. Select GCUT and BCUT with $\boxed{1}$ and $\boxed{4}$.
6. Adjust with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
7. Set PICTURE and BRIGHTNESS to maximum.
8. Select GDRV and BDRV with $\boxed{1}$ and $\boxed{4}$.
9. Adjust with $\boxed{3}$ and $\boxed{6}$ for the best white balance.
10. To write into memory, press $\boxed{\text{MUTING}}$ then $\boxed{\text{ENTER}}$.

SECTION 4
SAFETY RELATED ADJUSTMENTS

4-1. ⧓ R564 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components which are marked with ◪ on the schematic diagram:

Part Replaced (◪)	Adjustment (⧓)
DY, T505, CRT, IC501, C507, C520, C505, C509, C515, T504, T503, C551, L510, C546, C537, C547, D517, D518, D519, R560, R561, R562, R563, R565, R566, R567, R525 .... A Board IC301 .... MA Board	HV HOLD-DOWN R564

Preparation Before Confirmation

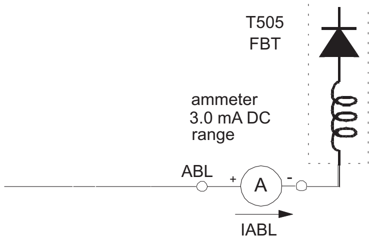
1. Using a Variac, apply AC input voltage: 120 ± 2 VAC.
2. Turn the POWER switch ON.
3. Input a white signal and set the PICTURE and BRIGHTNESS controls to maximum.
4. Confirm that the voltage between C546 (+) or TP503 and ground is more than 21.0 VDC (KV-27FV16/29FV16/29FV16C ONLY), 23.0 VDC (KV-32FS12/32FS16 ONLY).

Hold-Down Operation Confirmation

1. Connect the current meter between Pin 11 of the FBT (T505) and the PWB land where Pin 11 would normally attach. (See Figure 1 on the next page.)
2. Input a dot signal and set PICTURE and BRIGHTNESS to minimum: IABL = 1730 ± 100 µA (KV-27FV16/29FV16/29FV16C ONLY), IABL = 2175 + 100/- 325 µA (KV-32FS12/32FS16 ONLY).
3. Confirm the voltage of A Board TP-600 is 135 ± 1.5 VDC.
4. Connect the digital voltmeter and the DC power supply via diode 1SS119 to C546 (+) and ground. (See Figure 1 on the next page.)
5. Increase the DC power voltage gradually until the picture blanks out.
6. Turn DC power source off immediately.
7. Read the digital voltmeter indication (standard < 24.78 +0.0/-0.1 VDC - KV-27FV16/29FV16/29FV16C ONLY) (standard < 27.24 + 0.0/- 0.1 VDC - KV-32FS12/32FS16 ONLY) .
8. Input a white signal and set PICTURE and BRIGHTNESS to maximum: IABL = 1730 ± 100 µA (KV-27FV16/29FV16/29FV16C ONLY), IABL = 2175 + 100/- 325 µA (KV-32FS12/32FS16 ONLY).
9. Repeat steps 4 to 7.

Hold-Down Readjustment

If the setting indicated in step 2 of Hold-Down Operation Confirmation cannot be met, readjustment should be performed by altering the resistance value of R564 component marked with ⧓ .



4-2. B+ VOLTAGE CONFIRMATION AND ADJUSTMENT

Note: The following adjustments should always be performed when replacing the following components, which are marked with ◪ on the schematic diagram on the A Board.

A BOARD:	IC601, PH601

1. Using a Variac, apply AC input voltage: 130 + 2.0/-0.0 VAC.
2. Input a monoscope pattern.
3. Set the PICTURE and BRIGHTNESS controls to minimum.
4. Confirm that the voltage of A Board TP-600 is <136.5 VDC.
5. If step 3 is not satisfied, replace the components listed above, then repeat steps 1–3.

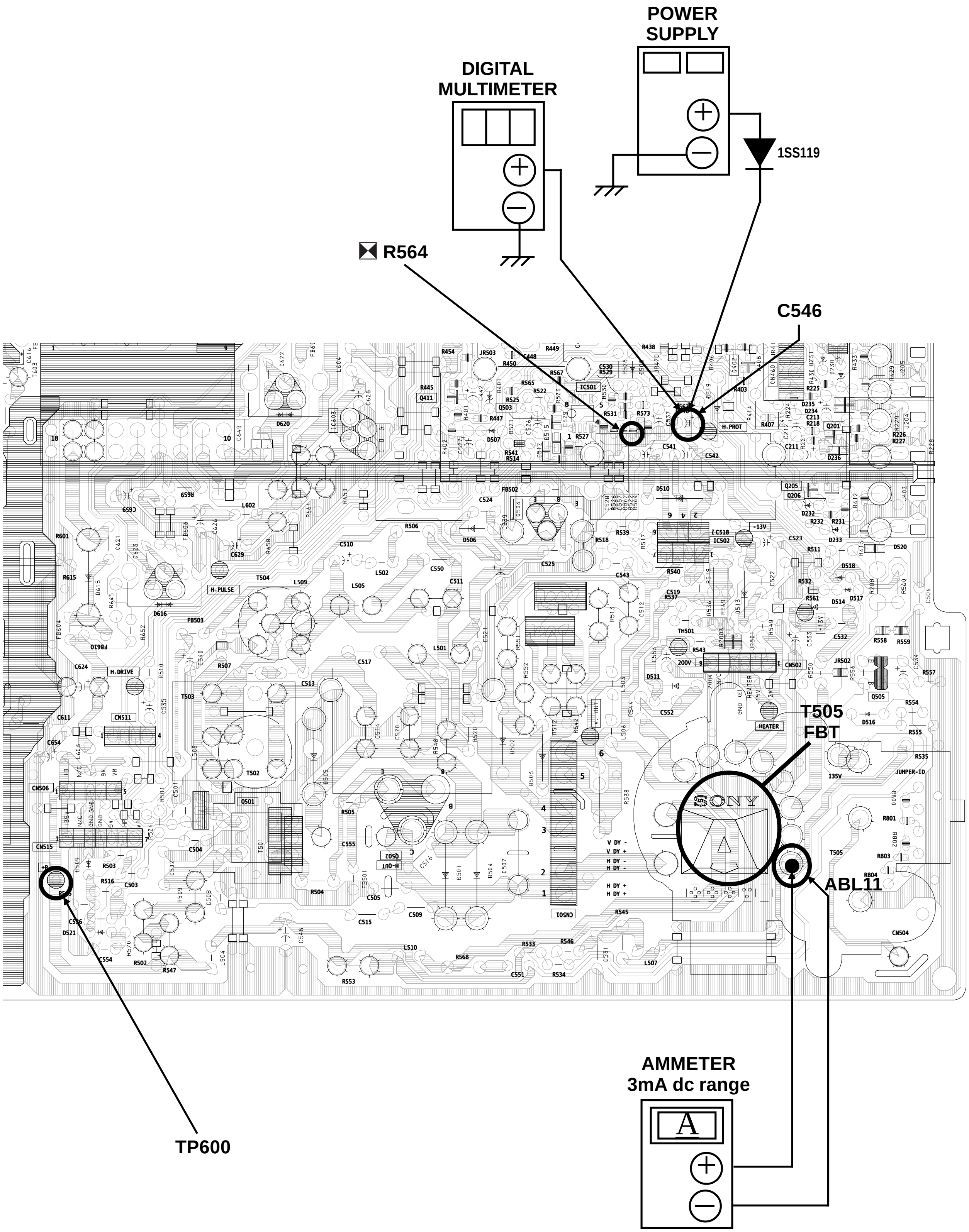

POWER SUPPLY
DIGITAL MULTIMETER
1SS119
R564
C546
T505 FBT
ABL11
TP600
AMMETER 3mA dc range
A

Figure 1

SECTION 5
CIRCUIT ADJUSTMENTS

ELECTRICAL ADJUSTMENTS BY REMOTE COMMANDER

Use the Remote Commander (RM-Y168, RM-Y169 or RM-Y171) to perform the circuit adjustments in this section.

NOTE: Test Equipment Required:

- Pattern generator
- Frequency counter
- Digital multimeter
- Audio oscillator

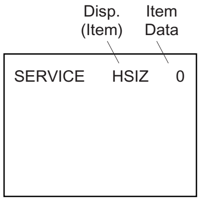
5-1. SETTING THE SERVICE ADJUSTMENT MODE

1. Standby mode (power off).
2. Display ➡ Channel 5 ➡ Sound volume + ➡ Power

   on the Remote Commander (press each button within a second).

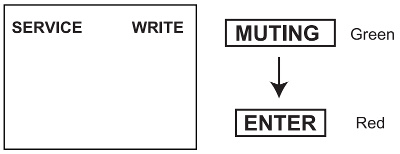
Service Adjustment Mode On

1. The CRT displays the item being adjusted.

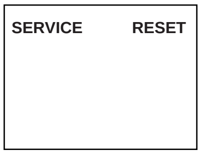


2. Press 1 or 4 on the Remote Commander to select an item.
3. Press 3 or 6 on the Remote Commander to change the data.
4. Press MUTING then ENTER to save into the memory.

Service Adjustment Mode Memory



1. Press 8 then ENTER on the Remote Commander to initialize.



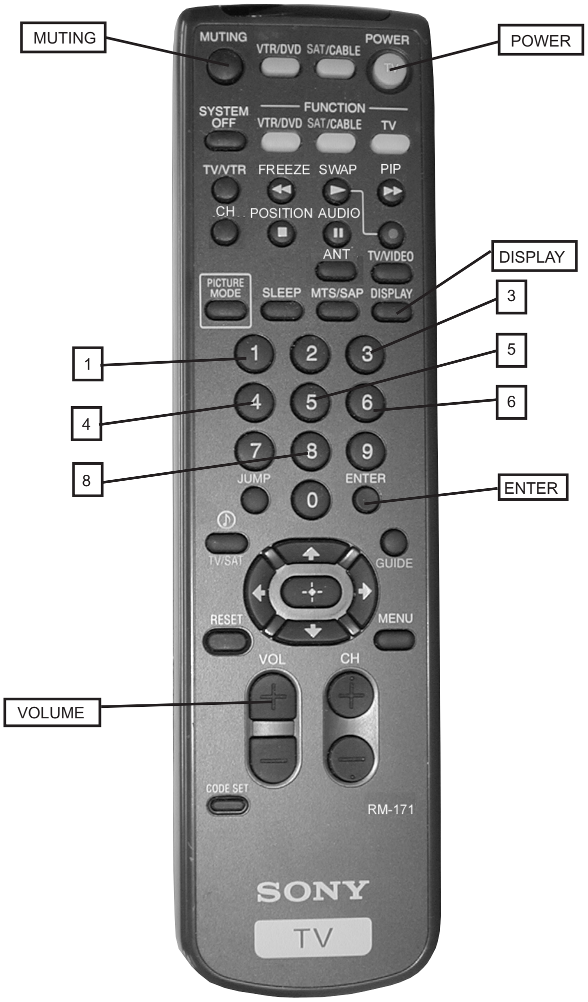
Carry out step 1 when adjusting IDs 0–4 and when replacing and adjusting IC003.

2. Turn set off then on to exit service adjustment mode.

5-2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, remove the power plug from the AC outlet, then plug it in again.
2. Turn the power switch ON and set to service mode.
3. Call the adjusted items again to confirm they were adjusted.

5-3. ADJUSTMENT BUTTONS AND INDICATORS



RM-Y171

Adjustment Items

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC 27	PAL M	PAL N	VIDEO	NTSC 32	RF	AVERAGE DATA 27FV	AVERAGE DATA 32FS
1	HSIZ	Horizontal Size Adjustment	0-63		15	12	7		18		11	22
2	HPOS	Horizontal Position Adjustment	0-63		13	8	9		13		20	22
3	VBOW	Vertical Line Bowing Adj.	0-15		9	10	8		9		7	9
4	VANG	Vertical Line Bowing Slant Adj.	0-15		8	10	9		3		9	7
5	VTRP	TRAPEZIUM	0-31		19	14	14		18		21	17
6	HTRP	Horiz. Trapezoid	0-15		6	7	5		6		0	2
7	TROT	Tilt Correction	0-63		31	31	31		31		31	31
8	PAMP	Horizontal PIN distortion Adj.	0-63		19	19	21		27		20	27
9	UPIN	Upper PIN Distortion Adj.	0-63		34	33	36		41		37	38
10	LPIN	Lower PIN Distortion Adj.	0-63		32	34	40		39		33	35
11	VSIZ	Vertical Size Adjustment	0-63		32	43	29		51		33	51
12	VPOS	Vertical Position Adj.	0-63		30	30	32		42		36	39
13	VLIN	Vertical lineality Adj.	0-15		3	6	10		5		3	4
14	SCOR	Vertical "S" Correction Adjustment	0-15		6	8	10		8		8	8
15	VZOM	16:9 CRT Z Mode on/off	0-1	0							0	0
16	EHT	Vertical High-Voltage Compensation	0-15	5							5	5
17	ASP	Aspect Ratio control	0-63	47							47	47
18	SCRL	16:9 CRT Z Mode Trans. Scroll	0-63	31							31	31
19	HBLK	Horizontal Blanking on/off	0-1	1							1	1
20	LBLK	Left Blanking Adjustment	0-15	13							13	13
21	RBLK	Rigth Blanking Adjustment	0-15	8							7	8
22	HDW	Horizontal Drive Pulse Width		1							1	1
23	EWDC	"Parabola" EW, D.C. Adjustment	0-1	0							0	0
24	LVLN	Lower Screen BTM Vertical Line Adj.	0-15	0							0	0
25	UVLN	Uppe Screen BTM Vertical Line Adj.	0-15	0							0	0
26	INTL	INTERLACE	0-3	0							0	0
27	G2SW		0-1	0							0	0
28	G2LV		0-7	0							0	0
29	HOSC	Horizontal VCO Oscillation Freq.	0-15	7							7	7
30	VSS	Vertical Sync Slice Level	0-3	0							0	0
31	HSS	Horizontal Sync Slice Level	0-1	0							0	0
32	HMSK	For Macro Vision	0-1	0							0	0
33	VTMS	Select Signal VTIM Pin	0-3	0							0	0
34	CDMD	Vertical Count Down Mode Switching	0-3		*	*	*	3			3	3
35	AFC	AFC Loop Gain Switching	0-3	0							0	0
36	FIFR	Field Frequency	0-3	**							3	3
37	VBLK	VBLKW	0-3	0							0	0
38	REFP	REFP	0-1	0							0	0
39	JPSW	JUMPSW	0-1	MENU							0	0
40	RDRV	R Output Drive control	0-63	***							31	40
41	GDRV	G Output Drive control	0-63	25							22	42
42	BDRV	B Output Drive control	0-63	25							21	31
43	RCUT	R Output Cutoff control	0-63	31							31	31
44	GCUT	G Output Cutoff control	0-63	15							13	12
45	BCUT	B Output Cutoff control	0-63	12							14	15
46	SCON	SUB CONT	0-15	8							11	11
47	SHUE	Sub HUE adjustment	0-15	16							17	16
48	SCOL	Sub COLOR adjustment	0-15		16	16	16				17	18
49	SBRT	Sub BRIGHTNESS adjustment	0-31	16							15	16
50	CHUE	SUB COLOR (RF)	0-31	7							6	6
51	CCOL	SUB COLOR (RF)	0-31		7	7	7				7	4
52	UOFS	YUV U OFFSET	0-15	7							7	7
53	VOFS	YUV V OFFSET	0-15	7							7	7
54	RON	R Output on/off	0-1	1							1	1
55	GON	G Output on/off	0-1	1							1	1
56	BON	B Output on/off	0-1	1							1	1
57	AXPL	Axis PAL	0-1	0							0	0
58	AXNT	Axis NTSC	0-1	1							1	1
59	CBPF	Chroma BPF on/off	0-1	1							1	1
60	CTRP	Y TRAP FILTER on/off	0-1	1							1	1
61	COFF	Color On/off	0-1	0							0	0
62	KOFF	Set Color Killer	0-1	0							0	0
63	SSHP	Sub SHARPNESS	0-15	5							5	5
64	SHPF	SHARPNESS Circuit Fo	0-3	Palette							2	2
65	PREL	Pre-Shoot/ Over-Shoot	0-1	1							0	0
66	Y-DC	DC transmition Ratio Switching	0-3	Palette							2	2
67	GAMM	Gamma Correction	0-3	Palette							2	2
68	ABLM	ABL Mode Switch	0-1	1							1	1
69	VTH	ABL CD VHT Switching	0-1	1							1	1
70	YDEL	Y Delay Time Control	0-15	7							7	7
71	NCOL	No Color ID	0-1	1							1	1
72	FSC	FSC Out on/off	0-1	1							1	1
73	K-ID	Killer ID Control on/off	0-1	0							0	0
74	GDOF		0-31	3							3	3
75	BDOF		0-31	16							16	16
76	GCOF		0-31	16							16	16
77	BCOF		0-31	7							7	7
78	SYSC	Color System	0-7	4							4	4
79	VENH	Vertical Enhancement	0-7	Palette							5	3

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC 27	PAL M	PAL N	VIDEO	NTSC 32	RF	AVERAGE DATA 27FV	AVERAGE DATA 32FS
80	PDSO	PDS OFF	0-1	0							0	0
81	CK	CK	0-1	0							0	0
82	VNL	VNL	0-15	3							3	3
83	HPK	HPK	0-1	0							0	0
84	HPKO	HPK OFF	0-1	Palette							0	0
85	CORE	CORE	0-3	2							1	1
86	TRAP	TRAP	0-1	1							1	1
87	CHTR	CH TRAP	0-1	0							0	0
88	CBPF	CBPF	0-1	1							1	1
89	ENHO	ENHOFF	0-1	0							0	0
90	NMRD	NMRD	0-3	0							0	0
91	YAPS	YAPS	0-3	3							3	3
92	CLKS	CLKS	0-3	0							0	0
93	NSTD	NSTDS	0-3	0							0	0
94	MSS	MSS	0-3	0							0	0
95	KILS	KILS	0-3	1							1	1
96	ADIN	ADIN	0-1	0							0	0
97	EXCS	EXCSS	0-3	1							1	1
98	CPP	CPP	0-3	2							2	2
99	HDP	HDP	0-7	4							4	4
100	CDL	CDL	0-7	4							4	4
101	DYCR	DYCOR	0-15	2							2	2
102	DYGN	DYGAIN	0-15	10							10	10
103	DCCR	DCCOR	0-15	3							3	3
104	DCGN	DCGAIN	0-15	6							6	6
105	YNRL	YNRLIM	0-3	1							1	1
106	CNRL	CNRLIM	0-3	1							1	1
107	WSC	WSC	0-3	1							1	1
108	VTRH	VTRH	0-3	1							1	1
109	VTRR	VTRR	0-3	1							1	1
110	LDSR	LDSR	0-3	2							2	2
111	VAPG	VAPGAIN	0-7	3							3	3
112	VAPI	VAPINV	0-31	6							6	6
113	TEST	TEST	0-1	0							0	0
114	YPFT	YPFT	0-3	3							3	3
115	YPFG	YPFG	0-15	7							7	7
116	CC3N	CC3N	0-1	0							0	0
117	SELD		0-1	1							1	1
118	D2GN	D2GAIN	0-7	4							5	5
119	YHCR	YHCOR	0-3	0							0	0
120	YPFC	YPFCOR	0-1	0							0	0
121	SHT	SHT	0-3	0							0	0
122	MVT	MVT	0-1	0							0	0
123	OTT	OTT	0-1	0							0	0
124	CL2D	CL2D	0-1	1							1	1
125	CLKG	CLKGGT	0-1	0							0	0
126	HPLL	HPLLFS	0-1	1							1	1
127	BPLL	BPLLFS	0-1	0							0	0
128	FSCF	FSCFG	0-1	0							0	0
129	PLLS	PLLS	0-1	1							1	1
130	KILR	KILR	0-15	3							3	3
131	HSSL	HSSL	0-15	12							12	12
132	VSSL	VSSL	0-15	8							8	8
133	BGPS	BGPS	0-15	4							4	4
134	BGPW	BGPW	0-15	10							10	10
135	ADCK	ADCLKS	0-3	3							3	3
136	NDSW	NSDSW	0-1	1							1	1
137	PFRN	FREE_RUN	0-1	0							0	0
138	PRVS	RVS	0-1	0							0	0
139	PCON	CONTRAST	0-127	45							45	45
140	PUCO	U-DAC	0-127	16							16	16
141	PVCO	V-DAC	0-127	24							24	24
142	PHUE		0-31	15							15	15
143	PKIL	KILLER	1	0							0	0
144	PSEP	EXT_SC_SEL	0-3	2							2	2
145	PHIM		0-1	0							0	0
146	PSUB		0-1	0							0	0
147	PBGS	BG_START	0-63	14							14	14
148	PDL0		0-15	6							6	6
149	PDL1		0-15	13							13	13
150	PBRT	Y_OFFSET	0-31	25							25	25
151	PVP1			0							0	0
152	PUP1			0							0	0
153	PVP2			0							0	0
154	PUP2			0							0	0
155	PVP3			0							0	0
156	PUP3			0							0	0
157	PACS	SET_ACC	0-1	1							1	1
158	PSDL	SYNC_DELAY	0-3	0							0	0

Reg #	ITEM	FUNCTION	RANGE	FIX DATA	NTSC 27	PAL M	PAL N	VIDEO	NTSC 32	RF	AVERAGE DATA 27FV	AVERAGE DATA 32FS
159	PDCO		0-3	0							0	0
160	PCGA	C_GAIN	0-1	1							1	1
161	PAAF		0-1	0							0	0
162	PSU2		0-1	0							0	0
163	PCVF		0-1	0							0	0
164	PBIT	BITSEL	0-1	0							0	0
165	PAFC	AFCBITSEL	0-1	0							0	0
166	PACC	ACC_LEVEL	0-63	22							22	22
167	PBUR	BURST_CLK	0-1	0							0	0
168	PEVE	EVENUPRA	0-1	0							0	0
169	PINW	INV_WFF	0-1	0							0	0
170	PINR	INV_REF	0-1	0							0	0
171	PREF	RFF_FIX	0-1	0							0	0
172	PARE	AUTO_REF	0-1	1							1	1
173	PAVE	AVERAGE	0-1	0							0	0
174	PFRA	FREE_RUN_ADJ	0-15	0							0	0
175	PPAL	SUB_PALM_JUDGE	0-255	0							0	0
176	PHPO		0-31	6							7	6
177	PVPO		0-31	22							22	22
178	PHTI	HT	0-15	7							9	9
179	PHAJ	ADJ	0-15	1							1	1
180	PBGY	BGY	0-15	0							0	0
181	PCRO	CROSS_SEL	0-1	0							0	0
182	PPAR	PALRY	0-63	2							2	2
183	PHPF	HPFOFF	0-1	0							0	0
184	PFSC	FSC_OUTPUT	0-1	0							0	0
185	PVCH	SET_VCHIP	0-1	0							0	0
186	PVON	VCHIP_ONLY	0-1	1							1	1
187	PVLN	LINE_NUM	0-31	17							17	17
188	PVSB	STB_DLY	0-255	64							64	64
189	PVLV	L_LEVEL	0-255	130							130	130
190	SBAL	Sub Balance	0-7	5							5	5
191	SBAS	Sub Bass	0-7	0							0	0
192	STRE	Sub Trebble	0-7	3							3	3
193	BBEL	BBE Low	0-15	0	****						0	0
194	BBEH	BBE High	0-15	0	*****						0	0
195	BBE	BBE	0-1	0	******						0	0
196	AUX	SRS, Simulated	0-3	0	0						0	0
197	DISP	O.S.D Display position	0-127	20							32	34
198	HCLW	Horizontal Count lower limit	0-255	16				16			16	16
199	HCHG	Horizontal Count High limit	0-255	64				64			64	64
200	ID0		0-255	89							See ID Map	
201	ID1		0-255	31							See ID Map	
202	ID2		0-255	79							See ID Map	
203	ID3		0-255	146							See ID Map	
204	ID4		0-255	137							See ID Map	
205	ID5		0-255	19							See ID Map	
206	ID6		0-255	0							See ID Map	

* CDMD = 3 for US & CND, CDMD = 0 for Other
** FIFR = 3 for NTSC models, FIFR = 1 for Trinorma models
*** 41 for 27FS/32FS families, 31 for 27FV family
**** BBEL = 5 for 27FV family; 6 for 29FV family and 0 for 32FS family
***** BBEH = 5 for 27FV family; 7 for 29FV family and 0 for 32FS family
****** BBE = 1 for 27FV/29FV families and 0 for 32FS family

SERVICE ID0 25

Notes:

No. 1–206 show the order that each adjustment mode may be selected while in service mode. Data Range shows the range of possible settings for each adjustment mode. Initial Data shows the standard settings for each adjustment mode.

Feature ID Map

Model	Destination	ID-0	ID-1	ID-2	ID-3	ID-4	ID-5	ID-6
KV-27FV16	US	89	63	239	146	133	19	7
KV-27FV16	CND	89	63	239	178	133	19	7
KV-29FV16	E	17	63	255	130	229	19	7
KV-29FV16C	E	17	63	255	130	229	19	7
KV-32FS12	US	89	31	79	146	137	19	0
KV-32FS12	CND	89	31	79	178	137	19	0
KV-32FS16	US	89	31	79	146	137	19	7
KV-32FS16	CND	89	31	79	178	137	19	7

5-4. MA BOARD ADJUSTMENTS

H. Frequency (Free Run) Check

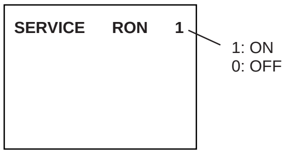
1. Input a TV mode (RF) with no signal.
2. Connect a frequency counter to base of Q501 (TP-500 H. DRIVE) on the A Board.
3. Check H. Frequency for 15735 ± 200 Hz

V. Frequency (Free Run) Check

1. Select video 1 with no signal input.
2. Set the conditions for a standard setting.
3. Connect the frequency counter to TP-508 (V OUT) or CN501pin ⑥ (V DY+) and ground on the A Board .
4. Check that V. Frequency shows 60 ± 4 Hz.

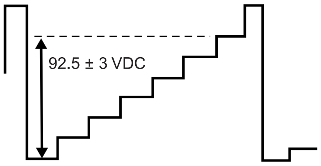
Drive (RDRV)

1. Input a color-bar signal and set the level to 75%.
2. In Standard mode, set PICTURE to maximum and COLOR to minimum.
3. Activate the Service Adjustment Mode.
4. Set both GON and BON items. Using 3 and 6; set each to the following values. Leave RON set to "1".



R ON:	ON	(1)
G ON:	OFF	(0)
B ON:	OFF	(0)

5. Connect an oscilloscope probe to CA Board, J701 Pin 12 (KR) (Red Out) .
6. Select RDRV with 1 and 4 .
7. Adjust the value of RDRV with 3 and 6 for 92.5 ± 3 VDC.



8. Reset GON and BON values to "1".

R ON:	ON	(1)
G ON:	ON	(1)
B ON:	ON	(1)

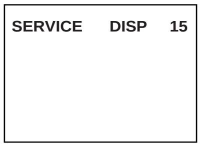
9. Reset Picture and Color to normal values:

PICTURE:	MAX
COLOR:	CENTER

10. Press MUTING then ENTER to save into the memory.

Display Position Adjustment (DISP)

1. Input a color-bar signal.
2. Set to Service Adjustment Mode.
3. Select DISP with 1 and 4 .
4. Adjust values of DISP with 3 and 6 to adjust characters to the center.
5. Write to memory by pressing MUTING then ENTER .
6. Check to see if the text is displayed on the screen.

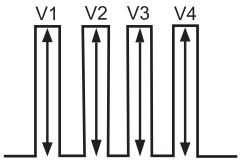


Sub Bright Adjustment (SBRT)

1. Input a monoscope signal.
2. Activate the Service Adjustment Mode.
3. Set the PICTURE and BRIGHTNESS to minimum.
4. Select the SBRT item with 1 and 4 .
5. Adjust the values of SBRT with 3 and 6 to obtain a faintly visible crosshatch.
6. Press MUTING then ENTER to save into the memory.

Sub Hue, Sub Color Adjustment (CHUE, CCOL)

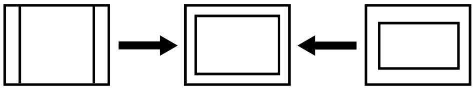
1. Input a color-bar signal and set level to 75%.
2. Activate the Service Adjustment Mode.
3. Connect an oscilloscope probe to CA Board, CN705 Pin ④.
4. Select the CHUE and CCOL item with 1 and 4 .
5. While showing the CHUE item, adjust the waveform with 3 and 6 until the second and third bars show the same level (V2 = V3 < 0.1 Vp-p).
6. While showing the CCOL item, adjust the waveform with 3 and 6 until the first and fourth bars show the same level (V1 = V4 < 0.1 Vp-p).



7. Press MUTING then ENTER to save into the memory.

V. Size Adjustment (VSIZ)

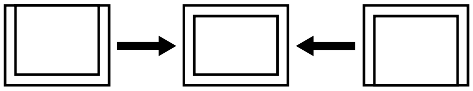
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VSIZ item with 1 and 4 .
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then ENTER to save into the memory.



V. Center Adjustment (VPOS)

Perform this adjustment after performing H. Frequency (Free Run) Check.

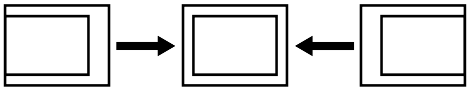
1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the VPOS item with 1 and 4 .
4. Adjust value of VPOS with 3 and 6 for the best vertical center.
5. Press MUTING then ENTER to save into the memory.



H. Center Adjustment (HPOS)

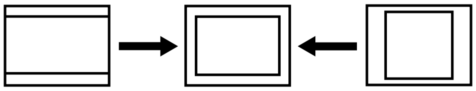
Perform this adjustment after performing H. Frequency (Free Run) Check.

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select the HPOS item with 1 and 4 .
4. Adjust the value of HPOS with 3 and 6 for the best horizontal center.
5. Press MUTING then ENTER to save into the memory.



H. Size Adjustment (HSIZ)

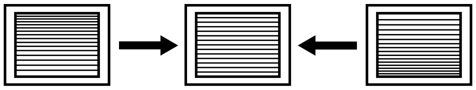
1. Input a monoscope signal.
2. Activate the Service Adjustment Mode.
3. Select HSIZ with 1 and 4 .
4. Adjust with 3 and 6 for the best horizontal size.
5. Press MUTING then ENTER to save into the memory.



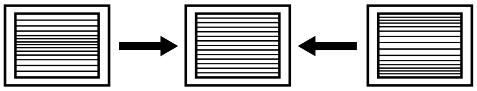
V. Linearity (VLIN), V. Correction (VSCO), Pin Amp (PAMP), and Horizontal Trapezoid (TRAP) Adjustments

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select VLIN, VSCO, PAMP, and PPHA with with 1 and 4.
4. Adjust with 3 and 6 for the best horizontal size.
5. Press MUTING then ENTER to save into the memory.

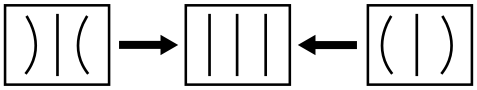
V LINEARITY (VLIN)



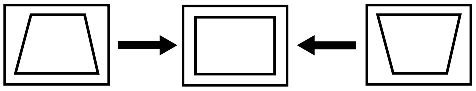
V CORRECTION (VSCO)



PIN AMP (PAMP)



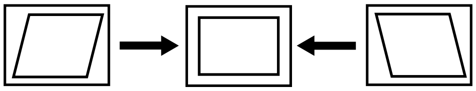
HORIZONTAL TRAPEZOID (TRAP)



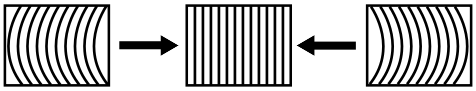
V. Angle (VANG), V. Bow (VBOW), Upper pin (UPIN) and Low Pin (LPIN) Adjustments

1. Input a crosshatch signal.
2. Activate the Service Adjustment Mode.
3. Select VANG, VBOW, UPIN, and LPIN with 1 and 4.
4. Adjust with 3 and 6 for the best picture.
5. Press MUTING then ENTER to save into the memory.

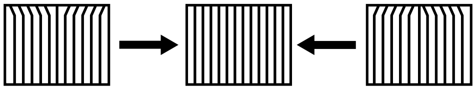
V ANGLE (VANG)



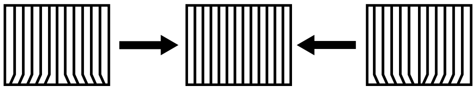
V BOW (VBOW)



UPPER PIN (UPIN)



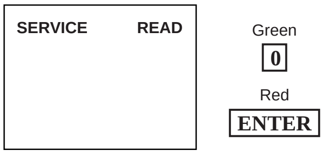
LOW PIN (LPIN)



Service Adjustment Mode Memory

1. Change the value of the DCOL item to “1”.
2. After completing all adjustments, press 0 then ENTER .

Read From Memory



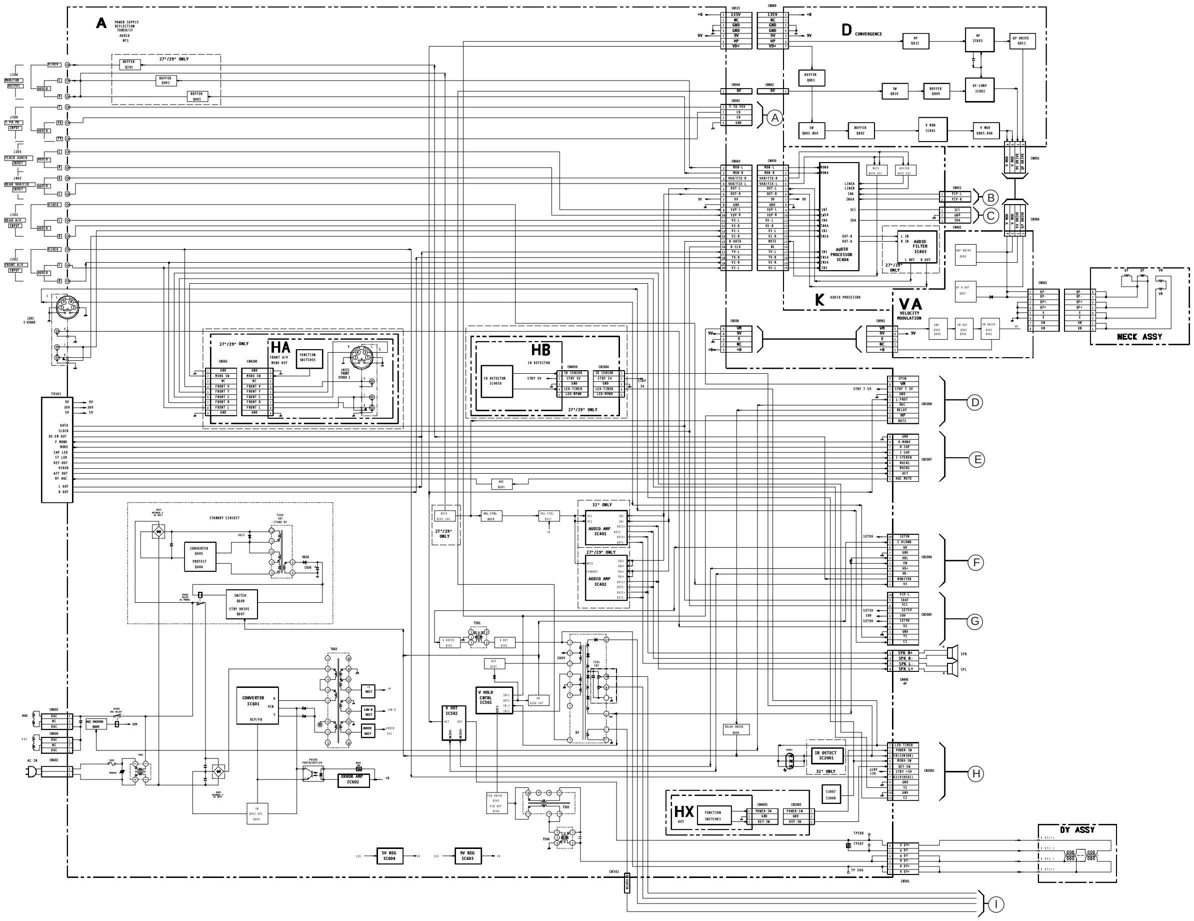
NOTES:

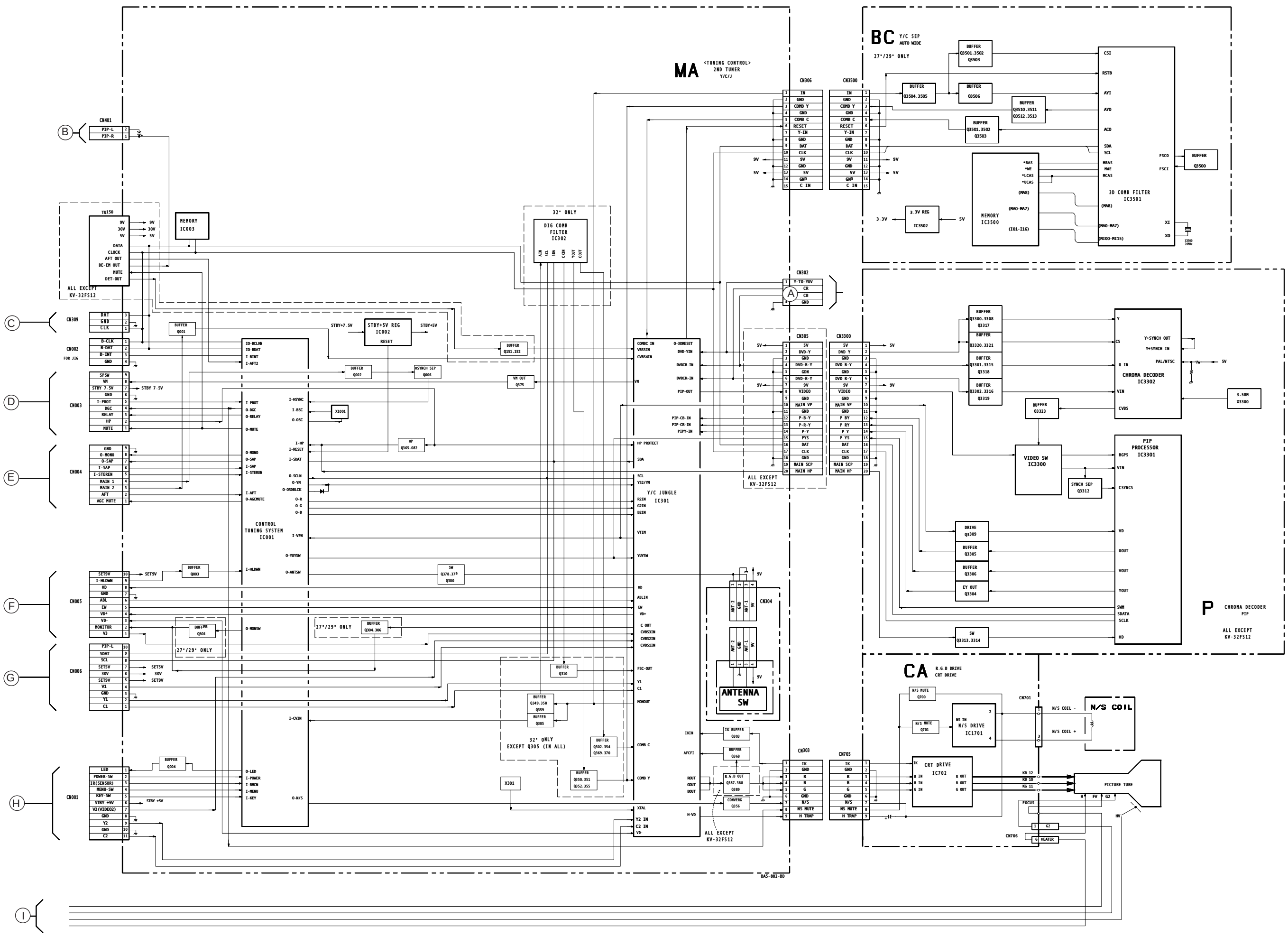
NOTES:

NOTES:

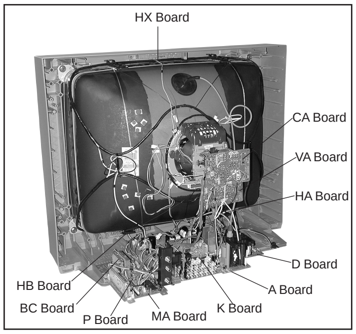
SECTION 6
DIAGRAMS

6.1 BLOCK DIAGRAM




MA
<TUNING CONTROL>
2ND TUNER
Y/C/J
BC
Y/C SEP
AUTO WIDE
27"/29" ONLY
3D COMB FILTER
IC3501
MEMORY
IC3500
3.3V REG
IC3502
CN306
CN3500
CN302
CN305
CN3300
CN401
CN309
CN002
CN003
CN004
CN005
CN006
CN001
TU150
ALL EXCEPT
KV-32FS12
MEMORY
IC003
32" ONLY
DIG COMB
FILTER
IC302
STBY+5V REG
IC002
RESET
CONTROL
TUNING SYSTEM
IC001
Y/C JUNGLE
IC301
CN304
ANTENNA
SW
P
CHROMA DECODER
PIP
CHROMA DECODER
IC3302
PIP
PROCESSOR
IC3301
VIDEO SW
IC3300
SYNCH SEP
Q3312
CA
R.G.B DRIVE
CRT DRIVE
N/S DRIVE
IC1701
CRT DRIVE
IC702
N/S COIL
PICTURE TUBE
CN703
CN705
CN701
CN706
A
B
C
D
E
F
G
H
I

6.2 CIRCUIT BOARD LOCATIONS



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows:

  Pitch: 5mm

  Rating electrical power 1/4W (CHIP: 1/10W)
- All resistors are in ohms.

  KΩ = 1000Ω MΩ = 1000KΩ
- : nonflammable resistor
- : fusible resistor
- △ : internal component
- ▭ : panel designation and adjustment for repair
- ⊥ : earth-ground
- ⊥ : earth-chassis
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⧓ and repeat the adjustment until the specified value is achieved (refer to Safety Related Adjustments on page 20).
- When replacing parts shown in the table below, be sure to perform the related adjustments.

Part Replaced (◪)	Adjustment (⧓)
DY, T505, CRT, IC501, C507, C520, C505, C509, C515, T504, T503, C551, L510, C546, C537, C547, D517, D518, D519, R560, R561, R562, R563, R565, R566, R567, R525........................A Board IC301.............................MA Board	HV HOLD-DOWN (R564)
IC601, PH601...................A Board	B+ VOLTAGE CONFIRMATION

- All voltages are in Volts

- Voltage is DC with respect to ground unless otherwise noted.
- Readings are taken with a 10MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references.
- * : cannot be measured
- ▬ : B + Line
- ╍ : B – Line
- ⇨ : Signal path

Reference Information

RESISTOR	:	RN	METAL FILM
	:	RC	SOLID
	:	FPRD	NON FLAMMABLE CARBON
	:	FUSE	NON FLAMMABLE FUSIBLE
	:	RW	NON FLAMMABLE WIREWOUND
	:	RS	NON FLAMMABLE METAL OXIDE
	:	RB	NON FLAMMABLE CEMENT
	:	※	ADJUSTMENT RESISTOR
COIL	:	LF-8L	MICRO INDUCTOR
CAPACITOR	:	TA	TANTALUM
	:	PS	STYROL
	:	PP	POLYPROPYLENE
	:	PT	MYLAR
	:	MPS	METALIZED POLYESTER
	:	MPP	METALIZED POLYPROPYLENE
	:	ALB	BIPOLAR
	:	ALT	HIGH TEMPERATURE
	:	ALR	HIGH RIPPLE

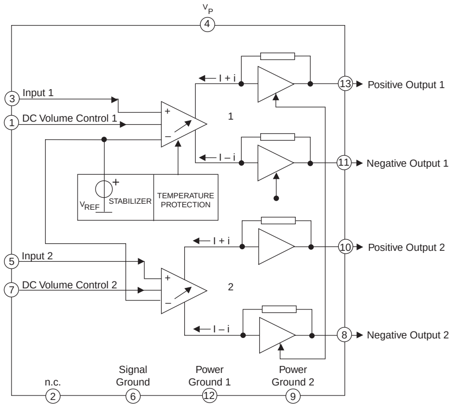
Note:

**The components identified by shading and ⚠ mark are critical for safety. Replace only with the part number specified.
The symbol ⊏⊐ (displayed on component side of the circuit board) indicates fast operating fuse. Replace only with fuse of the same rating as marked.**

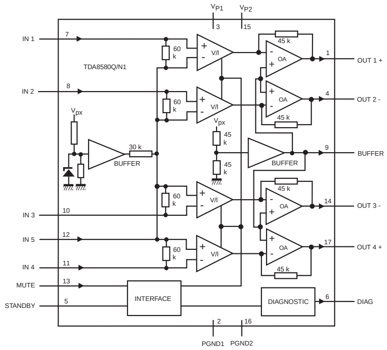
Les composants identifiés per un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié. Le symbole ⊏⊐ indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme marque.

A BOARD IC BLOCK DIAGRAMS

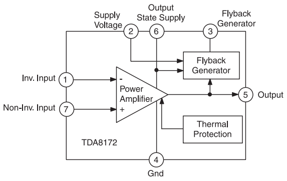
A BOARD: IC401 TDA7057AQ/2 (KV-32FS12/32FS16 ONLY)



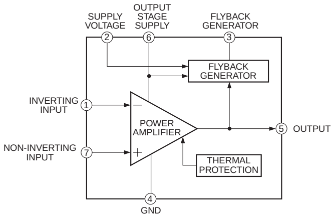
A BOARD: IC402 TDA8580Q/N1 (ALL EXCEPT 32FS12/32FS16)



A BOARD: IC502 TDA8172 (ALL EXCEPT 32FS12/32FS16)

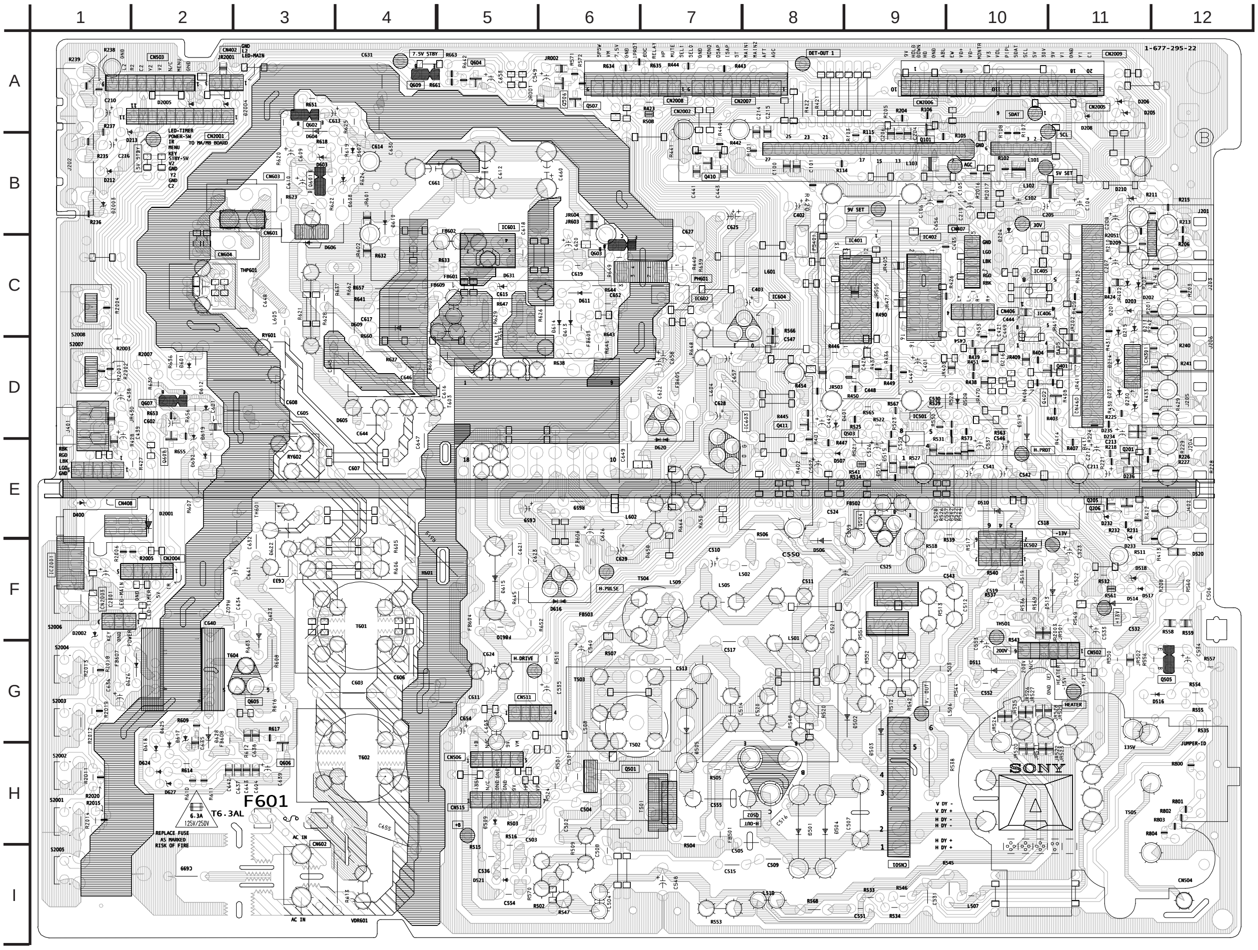


A BOARD: IC502 STV9379 (KV-32FS12/32FS16 ONLY)



A

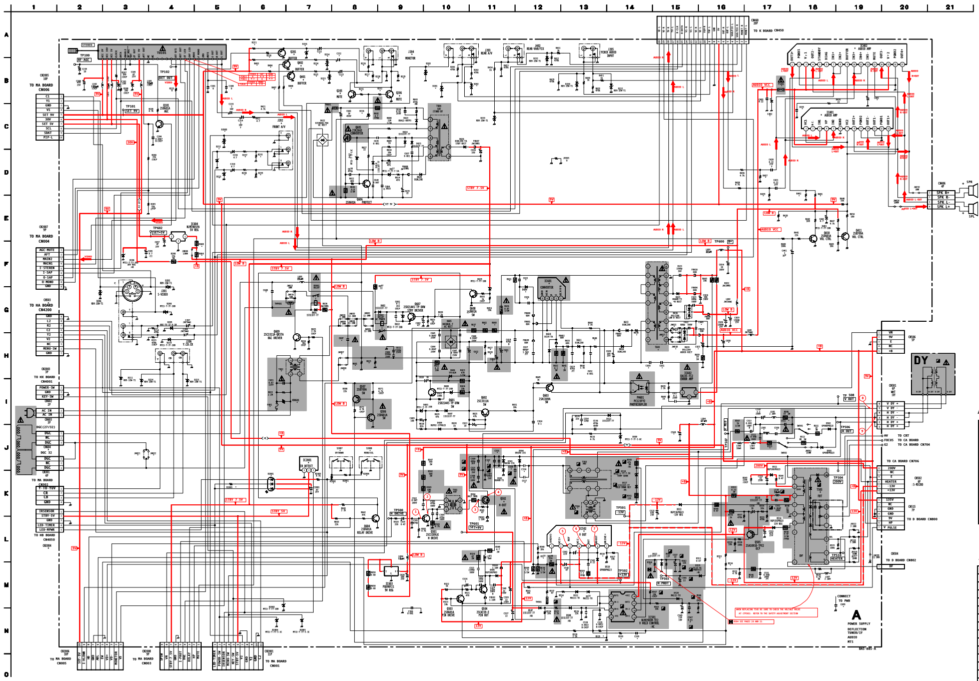
[POWER SUPPLY, DEFLECTION, TUNER/IF, AUDIO, MTS]



A BOARD LOCATOR LIST

DIODE		D602	E-2	Q402	C-11
D201	C-11	D603	B-3	Q410	B-7
D202	C-11	D604	B-3	Q411	D-8
D203	C-11	D605	D-4	Q501	H-7
D204	B-10	D606	C-3	Q502	H-7
D205	A-11	D607	B-4	Q503	D-9
D206	A-11	D608	B-3	Q504	E-9
D208	A-11	D609	C-4	Q505	G-12
D209	C-11	D610	B-4	Q506	A-6
D210	B-11	D611	C-6	Q507	A-6
D211	C-11	D612	D-2	Q601	B-3
D212	B-1	D613	C-6	Q602	A-3
D213	B-1	D614	C-6	Q603	C-6
D214	D-11	D615	F-5	Q604	A-5
D215	C-11	D616	F-6	Q605	G-3
D216	C-10	D617	H-2	Q606	H-3
D230	D-11	D618	H-2	Q607	D-2
D231	D-11	D619	D-2	Q608	D-2
D232	E-11	D620	D-7	Q609	A-4
D233	E-11	D622	F-3		
D234	D-11	D623	G-2		
D235	D-11	D624	G-5		
D236	E-11	D625	H-2		
D401	D-8	D626	G-1		
D501	H-8	D627	H-2		
D502	G-9	D628	H-2		
D503	G-9	D2001	E-2		
D504	H-8	D2002	F-1		
D505	G-7	D2003	B-1		
D506	F-8	D2004	A-2		
D507	E-8	D2005	A2		
D508	D-9	IC			
D509	H-5	IC401	C-9		
D510	E-10	IC402	B-9		
D511	G-10	IC501	D-9		
D512	E-9	IC502	F-10		
D513	F-10	IC601	B-5		
D514	F-11	IC602	C-7		
D515	E-9	IC603	D-7		
D516	G-11	IC604	C-8		
D517	F-11	IC2001	E-1		
D518	F-11	TRANSISTOR			
D519	D-10	Q101	A-9		
D520	F-12	Q201	D-11		
D521	I-5	Q205	E-11		
D522	E-9	Q206	E-11		
D601	D-2	Q401	C-11		

A BOARD SCHEMATIC DIAGRAM



A BOARD MARK (*) LIST

REF NO.	LOC.	KV-27FV16	KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16	REF NO.	LOC.	KV-27FV16	KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16
C211	A-7	470 16V	470	#	Q205	B-8	2SD601A-QRS-TX	2SD601A-QRS-TX	#
C212	A-8	4.7	4.7	#	Q206	B-9	2SD601A-QRS-TX	2SD601A-QRS-TX	#
C213	B-8	4.7	4.7	#	Q401	B-7	2SB709A-QRS-TX	2SB709A-QRS-TX	#
C401	B-19	100	100	#	Q402	B-6	2SB709A-QRS-TX	2SB709A-QRS-TX	#
C402	B-17	1000	1000	2200 25V	Q502	K-11	2SD2578-YB	2SD2578-YB	2SD2580-YB
C435	C-18	.22 25V	.22 25V	#	R218	A-6	100	100	#
C507	K-11	17000PF 1.2KV	17000PF 1.2KV	22000PF 1.2KV	R221	A-6	220	220	#
C511	J-17	1 250V	1 250V	.82 250V	R224	B-7	4.7K	4.7K	#
C514	K-11	.68 250V	.68 250V	.82 250V	R225	B-7	4.7K	4.7K	#
C517	K-11	#	#	0.1	R226	B-8	75	75	#
C520	K-11	.047 630V	.047 630V	.051 400V	R227	B-8	470K	470K	#
C530	N-14	0.0022	0.0022	0.001	R228	B-8	470K	470K	#
C548	J-15	22 160V	22 160V	100 160V	R229	B-9	470K	470K	#
C550	J-17	.1 250V	.1 250V	.47 250V	R231	B-8	6.8K	6.8K	#
C555	K-11	2700PF 1.2KV	2700PF 1.2KV	4700PF 1.2KV	R232	B-8	6.8K	6.8K	#
C607	H-7	.47 125V	.47 300V	.47 125V	R235	D-6	#	#	470K
C612	H-11	820 250V	#	820 250V	R237	C-6	#	#	220
C615	F-12	#	0.022	#	R238	D-6	#	#	220
C616	F-12	#	220PF	#	R239	D-6	#	#	470K
C625	H-16	1000	1000	1000	R401	D-18	20K	20K	#
C630	H-14	.0047 250V	#	.0047 250V	R402	D-18	10K	10K	#
C631	H-15	.0047 250V	#	.0047 250V	R403	B-6	4.7K	4.7K	#
C648	G-6	.22 125V	.22 300V	.22 125V	R404	B-6	4.7K	4.7K	#
C649	H-15	.0047 500V	0.0047	#	R407	B-6	100	100	#
C658	H-16	1000	1000	1000 25V	R408	B-6	100	100	#
C660	H-11	#	330 400V	#	R420	F-17	#	#	3.9K
C661	H-11	#	330 400V	#	R437	E-17	10K	10K	4.7K
C699	N-19	.0047 250V	#	.0047 250V	R439	E-17	10K	10K	4.7K
CN503	G-1	9P	9P	#	R518	L-13	6.8K	6.8K	5.6K
CN604	J-1	#	#	3P	R519	L-12	6.8K	6.8K	5.6K
CN2001	N-5	11P	11P	8P	R513	J-17	22 3W	22 3W	10 3W
CN2004	K-1	5P	5P	#	R514	M-12	22K	22K	8.2K
D201	C-10	RD9.1EW-T1	RD9.1EW-T1	#	R529	N-14	330K	330K	270K
D202	C-11	RD9.1EW-T1	RD9.1EW-T1	#	R530	N-14	15K	15K	18K
D203	C-10	RD9.1EW-T1	RD9.1EW-T1	#	R533	M-16	33K	33K	22K
D212	D-5	#	#	MTZJ-T7710B	R534	M-16	36K	36K	33K
D213	D-5	#	#	MTZJ-T7710B	R564	M-14	180K	180K	56K
D216	C-8	100	100	#	R601	H-8	4.7M 1/2W	#	4.7M 1/2W
D234	B-7	UDZ-TE-17-9.1B	UDZ-TE-17-9.1B	#	R615	I-8	#	8.2M 1W	#
D235	B-7	UDZ-TE-17-9.1B	UDZ-TE-17-9.1B	#	R627	H-11	390K	270K	390K
D236	B-7	UDZ-TE-17-9.1B	UDZ-TE-17-9.1B	#	R628	H-11	#	270K	270K
D609	G-12	#	RU-1P	#	R631	F-12	#	100K 3W	#
D2001	K-6	#	#	LNK0120022G	R637	H-11	#	5.6K 3W	#
D2003	C-5	#	#	RD9.1EW-T1	R638	H-14	33	56	33
F601	I-6	6.3A/125V	6.3A/250V	6.3A/125V	R646	H-13	1.5K	1.2K	1.5K
IC401	B-18	#	#	TDA7057AQ/N2	R648	E-4	4.7 3W	4.7 3W	33 3W
IC402	A-17	TDA8580Q/N1	TDA8580Q/N1	#	R660	H-11	15K 3W	5.6K	15K 3W
IC502	L-12	TDA8172	TDA8172	STV9379	R662	H-11	#	5.6K 3W	#
IC601	G-12	STR-F6626	STR-F6656	STR-F6626	R664	F-4	4.7 3W	4.7 3W	#
IC2001	J-7	#	#	SBX3081-71	R2001	K-8	#	#	2.2K
J202	C-6	#	#	3P	R2002	K-8	#	#	1.5K
J204	A-8	3P	3P	#	R2004	J-8	#	#	6.8K
JW615	G-15	#	#	5MM	R2005	K-5	#	#	0
JW616	G-15	#	#	5MM	S2007	J-7	#	#	1-762-816-11
JW617	G-15	5MM	5MM	#	S2008	J-8	#	#	1-762-816-11
JW618	G-15	5MM	5MM	#	T504	L-13	1-431-693-11	1-431-693-11	1-435-098-11
JW621	J-3	7.5MM	7.5MM	#	T505	K-18	8-598-834-20	8-598-834-20	8-598-824-10
JW622	J-3	7.5MM	7.5MM	#	T602	H-6	1-435-617-11	1-435-402-11	1-435-617-11
L505	J17	150UH	150UH	68UH	T603	F-14	1-435-403-11	1-435-402-11	1-435-403-11
PS401	B-17	1-532-686-21	1-532-686-21	1-576-336-21	VDR601	I-6	1-803-585-11	1-803-967-11	1-803-585-11
Q201	A-6	2SB709A-QRS-TX	2SB709A-QRS-TX	#					

#: Not Mounted

A BOARD IC VOLTAGE LIST

IC401		12	0.0	10	4.1	4	GND	7	2.1	IC603		IC2001		7	5.5	20	5.0
pin	volt	13	6.9	11	4.1	5	9.5	IC601		pin	volt	pin	volt	8	2.1	21	0.3
1	0.6	IC402		12	4.1	6	10.1	pin	volt	1	13.3	1	5	9	8.9	22	0.0
2	0.0	pin	volt	13	5.2	7	0.1	1	-31.8	2	8.9	2	5	10	4.1	23	0.0
3	2.4	1	6.8	14	6.8	8	14.0	2	-32.7	3	GND	3	GND	11	0.0	24	0.0
4	14.3	2	GND	15	14.1	IC502		3	53.2	4	13.3	TU101		12	N/C	25	0.0
5	2.4	3	14.1	16	GND	pin	volt	4	-23.8	IC604		pin	volt	13	N/C	26	4.5
6	0.0	4	6.8	17	6.8	1	2.1	5	-32.7	pin	volt	1	8.6	14	N/C	27	4.5
7	0.6	5	4.3	IC501		2	14.0	IC602		1	13.3	2	30.7	15	N/C		
8	6.9	6	NC	pin	volt	3	-12.6	pin	volt	2	5.0	3	5.1	16	N/C		
9	0.0	7	4.1	1	0.2	4	-13.9	1	135.9	3	GND	4	4.9	17	4.7		
10	6.9	8	4.1	2	3.7	5	0.2	2	123.4			5	4.9	18	4.4		
11	6.9	9	6.8	3	2.5	6	14.3	3	GND			6	GND	19	5.0		

All voltages are in V

A BOARD TRANSISTOR VOLTAGE LIST

Q101		Q401		Q501		Q505		Q602		Q607	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	0.0	B	4.5	B	0.0	B	134.9	B	-32.8	B	0.7
C	5.6	C	GND	C	93.3	C	1.8	C	-23.6	C	0.1
E	GND	E	0.1	E	GND	E	135.5	E	-32.9	E	GND
Q201		Q402		Q502		Q506		Q603		Q608	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	8.6	B	4.5	B	-0.1	B	0.0	B	-23.6	B	0.0
C	GND	C	GND	C	133.0	C	0.0	C	-31.2	C	0.7
E	9.0	E	0.2	E	GND	E	GND	E	-23.6	E	GND
Q205		Q410		Q503		Q507		Q604		Q609	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	-0.4	B	0.0	B	0.2	B	0.0	B	0.1	B	0.0
C	0.0	C	5.2	C	3.8	C	0.0	C	4.1	C	13.9
E	GND	E	GND	E	GND	E	0.0	E	GND	E	GND
Q206		Q411		Q504		Q601		Q606			
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt		
B	-0.4	B	5.3	B	0.1	B	-33.0	B	-36.1		
C	0.0	C	GND	C	-6.5	C	-33.0	C	-35.3		
E	GND	E	5.2	E	0.0	E	-33.1	E	-36.3		

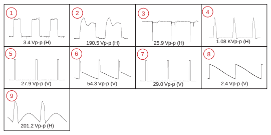
All voltages are in V

A BOARD TRANSISTOR VOLTAGE LIST

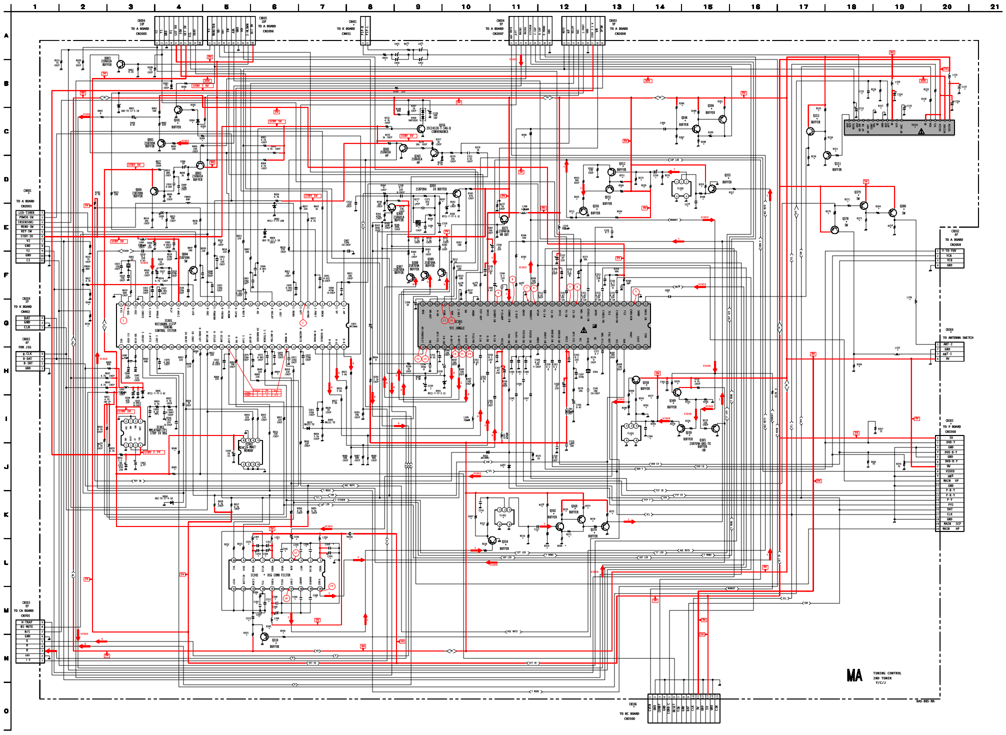
Q605	
pin	volt
D	-35.6
G	40.8
S	36.8

All voltages are in V

A BOARD WAVEFORMS



MA BOARD SCHEMATIC DIAGRAM



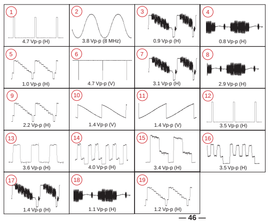
A Board MA Board

MA BOARD MARK (*) LIST

REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12	KV-32FS16	REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12	KV-32FS16
C005	F-14	.47 25V	#	.47 25V	Q379	E-19	2SB709A-QRS-TX	#	2SB709A-QRS-TX
C151	C-18	1	#	1	Q380	E-19	2SB709A-QRS-TX	#	2SB709A-QRS-TX
C153	B-18	0.0047	#	0.0047	R048	J-3	100	#	100
C154	B-19	47	#	47	R069	H-6	220	#	220
C155	C-19	10	#	10	R085	J-3	4.7K	#	#
C156	C-20	47 25V	#	47 25V	R089	H-4	220	#	#
C157	B-20	100	#	100	R150	D-17	1.5K	#	1.5K
C302	L-6	#	0.01	0.01	R151	D-18	100	#	100
C303	L-6	#	0.01	0.01	R154	D-17	560	#	560
C304	L-6	#	0.01	0.01	R155	C-17	560	#	560
C305	L-7	#	100 16V	100 16V	R156	B-17	33K	#	33K
C306	C-14	1 16V	#	#	R157	C-19	22K	#	22K
C307	M-5	#	10PF	10PF	R158	C-20	100	#	100
C308	M-6	#	0.01	0.01	R159	B-20	100	#	100
C309	M-6	#	100 16V	100 16V	R264	E-19	22K	#	22K
C311	M-6	#	180PF	180PF	R266	H-18	22K	#	22K
C314	K-10	#	15PF	15PF	R270	E-18	22K	#	22K
C317	K-11	#	0.01	0.01	R271	E-18	22K	#	22K
C324	F-15	#	15PF	15PF	R272	E-18	22K	#	22K
C332	M-5	#	0.0012	0.0012	R275	D-14	#	22K	22K
C336	D-14	#	47 25V	47 25V	R277	E-9	2.2M	3.3M	3.3M
C340	L-6	#	100 16V	100 16V	R284	C-11	1K	#	#
C345	I-11	0.01	#	0.01	R285	F-11	1K	#	#
C346	I-11	0.01	#	0.01	R286	C-14	47K	#	#
C347	I-11	0.01	#	0.01	R287	C-14	100K	#	#
C350	L-6	#	0.47	0.47	R288	C-15	470	#	#
C351	L-6	#	0.01	0.01	R289	C-15	1K	#	#
C354	L-6	#	100 16V	100 16V	R290	C-15	560	#	#
C355	L-6	#	0.01	0.01	R291	C-15	1.5K	#	#
C366	H-10	#	0.01	0.01	R298	C-4	4.7K	#	#
C368	M-7	#	0.01	0.01	R299	C-4	220	#	#
C369	L-7	#	0.01	0.01	R300	H-13	#	0	0
C380	I-11	#	0.01	#	R302	F-11	5MM	#	#
C381	I-11	#	0.01	#	R305	N-6	#	0	0
C382	I-11	#	0.01	#	R307	D-10	8.2K	#	#
C389	E-9	0.033	0.047	0.047	R311	E-12	#	100	100
C390	I-14	#	15PF	15PF	R314	E-19	22K	#	22K
C391	H-14	#	100 16V	100 16V	R316	K-11	#	5.6K	5.6K
C397	M-6	#	0.01	0.01	R317	D-15	#	100	100
C451	A-9	1 16V	#	1 16V	R318	K-12	#	56K	56K
C452	A-9	1 16V	#	1 16V	R319	K-12	#	22K	22K
C453	A-9	1 16V	#	1 16V	R320	K-11	#	100	100
C454	A-9	1 16V	#	1 16V	R321	K-11	#	560	560
CN001	E-1	11P	8P	8P	R328	I-14	#	100	100
CN304	G-20	4P	#	4P	R331	D-13	#	1K	1K
CN305	J-20	20P	#	20P	R333	D-14	#	5.6K	5.6K
CN306	O-14	15P	#	#	R334	I-14	#	100	100
CN401	A-8	2P	#	2P	R339	D-13	#	56K	56K
D303	J-11	1SS133T-77	#	1SS133T-77	R348	F-2	75	#	#
D304	C-4	MTZJ-T-77-3.3	#	#	R350	G-2	75	#	#
FB301	L-7	#	0UH	0UH	R351	I-14	#	470	470
FL301	I-13	#	1-239-847-11	1-239-847-11	R352	L-5	#	100	100
FL302	K-11	#	1-239-847-11	1-239-847-11	R353	L-5	#	100	100
FL303	D-14	#	1-239-847-11	1-239-847-11	R354	I-14	#	100	100
IC301	G-9	8-752-098-86	8-752-094-98	8-752-098-86	R355	N-5	#	1.5K	1.5K
IC302	L-5	#	TC90A49P	TC90A49P	R359	D-14	#	2.2K	2.2K
L150	B-19	10UH	#	10UH	R364	D-13	#	100	100
L151	B-20	100UH	#	100UH	R365	E-12	#	100	100
L303	L-5	#	10UH	10UH	R366	E-12	#	1.5K	1.5K
L304	M-6	#	10UH	10UH	R367	K-11	#	2.2K	2.2K
L350	L-7	#	10UH	10UH	R368	D-14	#	560	560
L351	L-6	#	10UH	10UH	R369	K-12	#	220	220
L356	G-19	0	#	0	R372	K-12	#	560	560
L357	H-19	0	#	0	R373	K-12	#	100	100
Q151	C-18	2SB709A-QRS-TX	#	2SB709A-QRS-TX	R374	K-13	#	100	100
Q152	C-17	2SD601A-QRS-TX	#	2SD601A-QRS-TX	R375	K-13	#	1.5K	1.5K
Q301	B-4	2SD601A-QRS-TX	#	#	R377	H-13	#	2.2K	2.2K
Q302	K-12	#	2SD601A-QRS-TX	2SD601A-QRS-TX	R378	I-14	#	0	0
Q304	C-15	2SD601A-QRS-TX	#	#	R379	K-12	#	1K	1K
Q306	C-15	2SD601A-QRS-TX	#	#	R380	B-4	0	#	#
Q310	N-6	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R381	C-4	6.8K	#	#
Q349	I-14	#	2SD601A-QRS-TX	2SD601A-QRS-TX	R386	M-6	#	820	820
Q350	E-12	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R389	I-13	#	1K	1K
Q351	D-13	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R392	I-14	#	5.6K	5.6K
Q352	D-13	#	2SD601A-QRS-TX	2SD601A-QRS-TX	R394	I-14	#	560	560
Q354	K-11	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R395	I-15	#	560	560
Q355	D-14	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R396	N-6	#	100	100
Q358	H-13	#	2SD601A-QRS-TX	2SD601A-QRS-TX	R398	E-9	56K	330K	330K
Q359	I-14	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R399	E-9	330K	39K	39K
Q369	K-12	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R434	A-8	4.7K	#	4.7K
Q370	K-13	#	2SB709A-QRS-TX	2SB709A-QRS-TX	R435	A-9	4.7K	#	4.7K
Q378	E-18	2SB709A-QRS-TX	#	2SB709A-QRS-TX	TU150	C-18	FSS BTF-FA402	#	FSS BTF-FA402

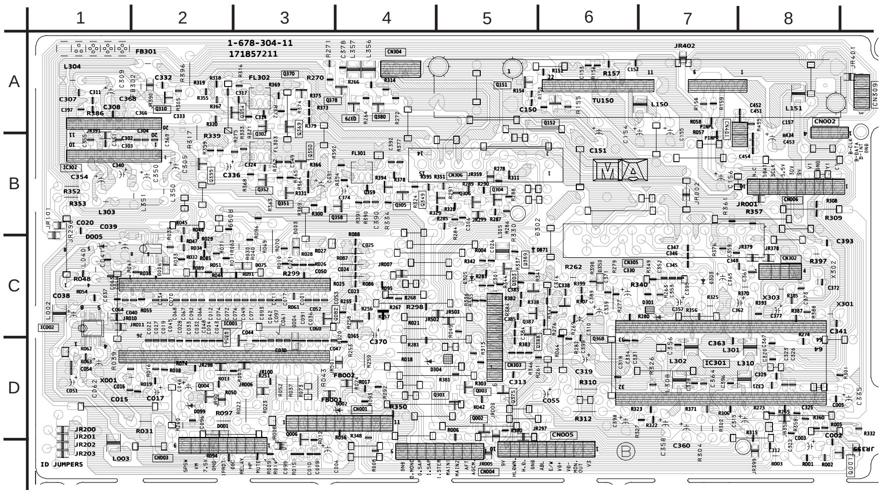
#: Not Mounted

MA BOARD WAVEFORMS



MA

[TUNING CONTROL, 2ND TUNER, Y/C/J]



MA BOARD IC VOLTAGE LIST

IC001		19	4.3	39	NC	59	NC	3	GND	13	8.9	33	3.6	53	9.0	8	5	6	5.1
pin	volt	20	0.1	40	NC	60	NC	4	GND	14	NC	34	2.3	54	5.3	9	4.9	7	NC
1	0.5	21	NC	41	NC	61	0.1	5	4.8	15	NC	35	2.3	55	1.6	10	4.9	8	NC
2	4.8	22	5.0	42	4.8	62	0.1	6	4.8	16	4.8	36	3.9	56	1.7	11	0	9	NC
3	NC	23	NC	43	4.8	63	0.1	7	GND	17	4.4	37	1.9	57	1.1	12	0	10	NC
4	5.0	24	5.0	44	NC	64	0.1	8	5.0	18	GND	38	1.9	58	7.2	13	2.5	11	7.5
5	0.0	25	2.1	45	4.8	**IC002**		**IC301**		19	NC	39	2.0	59	4.8	14	2.1	12	NC
6	0.0	26	NC	46	NC	pin	volt	pin	volt	20	6.4	40	0.0	60	4.8	15	5	13	9.0
7	2.4	27	0.3	47	4.8	1	GND	1	5.9	21	3.9	41	4.6	61	4.8	16	0	14	5.3
8	4.4	28	2.2	48	0.1	2	5.0	2	GND	22	5.6	42	4.6	62	NC	17	2.5	15	GND
9	NC	29	GND	49	0.1	3	4.9	3	5.2	23	8.9	43	4.6	63	NC	18	3.2	16	NC
10	NC	30	2.2	50	5.0	4	7.2	4	5.0	24	5.7	44	8.9	64	NC	19	1.9	17	GND
11	0.1	31	2.3	51	5.0	5	5.0	5	4.8	25	GND	45	0.2	**IC302**		20	2.4	18	NC
12	NC	32	GND	52	NC	6	GND	6	5.0	26	3.5	46	4.3	1	5	**TU150**		19	NC
13	0.5	33	5.0	53	1.0	7	GND	7	4.8	27	2.4	47	5.2	2	1.4	pin	volt	20	2.0
14	NC	34	2.5	54	0.1	8	NC	8	3.4	28	3.5	48	5.2	3	3.2	1	9.0	21	0.3
15	0.1	35	2.5	55	NC	**IC003**		9	4.8	29	3.5	49	GND	4	2.4	2	3.0	22	4.0
16	0.1	36	5.0	56	1.0	pin	volt	10	1.7	30	5.9	50	4.8	5	1.9	3	5.0		
17	0.0	37	3.1	57	NC	1	GND	11	0.0	31	5.5	51	5.2	6	5	4	4.8		
18	0.1	38	5.0	58	0.1	2	GND	12	4.8	32	7.6	52	5.2	7	0	5	4.8		

All voltages are in V

MA BOARD LOCATOR LIST

DIODE		D006	C-2	D305	B-5	IC301	D-7	Q004	D-2	Q302	A-3	Q349	C-4	Q356	D-3	Q370	A-3	Q388	B-5
D001	D-2	D075	C-3	D360	B-4	IC302	B-1	Q006	D-3	Q303	C-5	Q350	B-3	Q358	B-4	Q375	B-5	Q389	C-5
D002	D-4	D301	C-7	**IC**		**TRANSISTOR**		Q082	B-3	Q304	B-5	Q351	B-3	Q359	B-4	Q378	A-3	**CRYSTAL**	
D003	C-3	D302	C-5	IC001	C-2	Q001	D-8	Q151	A-5	Q305	B-4	Q352	B-3	Q365	C-4	Q379	A-4	X001	D-1
D004	D-3	D303	C-7	IC002	C-1	Q002	D-5	Q152	A-6	Q306	B-5	Q354	A-3	Q368	C-6	Q380	A-4	X301	C-8
D005	C-1	D304	D-4	IC003	C-2	Q003	D-5	Q301	D-4	Q310	B-3	Q355	B-2	Q369	B-3	Q387	C-5		

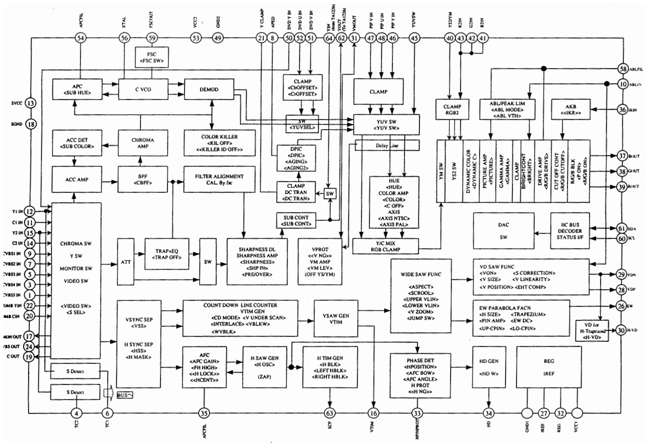
MA BOARD TRANSISTOR VOLTAGE LIST

Q001		**Q151**		**Q305**		**Q352**		**Q365**		**Q379**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	5.0	B	4.0	B	4.4	B	2.5	B	0.5	B	4.4
C	GND	C	GND	C	GND	C	7.8	C	3.8	C	5.1
E	5.6	E	4.6	E	5.0	E	1.9	E	0.0	E	5.1
Q002		**Q152**		**Q306**		**Q354**		**Q368**		**Q380**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	4.4	B	6.8	B	9.0	B	2.5	B	2.4	B	5.1
C	9.0	C	9.0	C	8.8	C	GND	C	9.0	C	0.0
E	3.8	E	6.2	E	9.0	E	3.2	E	2.4	E	5.1
Q003		**Q301**		**Q310**		**Q355**		**Q369**		**Q387**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	0.6	B	0.7	B	4.8	B	0.0	B	7.6	B	1.9
C	0.0	C	0.0	C	GND	C	GND	C	5.8	C	GND
E	GND	E	GND	E	5.4	E	3.0	E	8.3	E	2.5
Q004		**Q302**		**Q349**		**Q356**		**Q370**		**Q388**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	4.9	B	2.5	B	4.4	B	0.5	B	5.8	B	1.9
C	GND	C	7.6	C	9.0	C	1.3	C	GND	C	GND
E	3.9	E	1.9	E	3.8	E	GND	E	6.4	E	2.5
Q006		**Q303**		**Q350**		**Q358**		**Q375**		**Q389**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	5.2	B	3.6	B	4.0	B	2.4	B	5.0	B	2.0
C	0.7	C	0.1	C	GND	C	8.9	C	9.0	C	GND
E	5.0	E	3.5	E	4.7	E	1.8	E	4.4	E	2.6
Q082		**Q304**		**Q351**		**Q359**		**Q378**			
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt		
B	0.6	B	8.9	B	7.8	B	2.1	B	4.3		
C	0.5	C	9.0	C	4.0	C	GND	C	4.9		
E	GND	E	8.8	E	8.4	E	2.7	E	5.1		

All voltages are in V

MA BOARD IC BLOCK DIAGRAMS

MA BOARD: IC301 CXA2154S


APCFIL
XTAL
FSCOUT
VCC2
GND2
Y CLAMP
APED
DVD Y IN
DVD U IN
DVD V IN
YIN (from TA1226)
YOUT (To TA1226)
VMOUT
PIP V IN
PIP U IN
PIP Y IN
YUVSW
YS2/YM
R2IN
G2IN
B2IN
FSC <FSC SW>
APC <SUB HUE>
C VCO
DEMOD
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SW <YUVSEL>
YUV SW <YUV SW>
CLAMP RGB2
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ACC DET <SUB COLOR>
CHROMA AMP
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Delay Line
YM SW
YS2 SW
DYNAMIC COLOR <DYNAMIC C>
PICTURE AMP <PICTURE>
GAMMA AMP <GAMMA>
CLAMP
BRIGHTCONT <BRIGHT>
DRIVE AMP <R/G/B DRIVE>
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ACC AMP
BPF <CBPF>
FILTER ALIGNMENT CAL. By fsc
CLAMP DC TRAN <DC TRAN>
SW
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SUB CONT <SUB CONT>
DAC SW
IIC BUS DECODER STATUS I/F
CHROMA SW
Y SW
MONITOR SW
VIDEO SW
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ATT
TRAP+EQ <TRAP OFF>
SW
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VPROT <<V NG>> VM AMP <VM LEV> (OFF YS/YM)
Y/C MIX RGB CLAMP
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VD SAW FUNC <VON> <S CORRECTION> <V SIZE> <V LINEARITY> <V POSITION> <EHT COMP>
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H SYNC SEP <HSS> <H MASK>
COUNT DOWN LINE COUNTER VTIM GEN <CD MODE> <V UNDER SCAN> <INTERLACE> <VBLKW> <WVBLK>
VSAW GEN VTIM
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VD for H-Trapezoid <H-VD>
AFC <AFC GAIN> <FH HIGH> <<H LOCK>> <<HCENT>>
H SAW GEN <H OSC> (ZAP)
H TIM GEN <H BLK> <LEFT HBLK> <RIGHT HBLK>
PHASE DET <HPOSITION> <AFC BOW> <AFC ANGLE> H PROT <<H NG>>
HD GEN <HD W>
REG IREF
S Detect
S Detect
BUS
SVCC
SGND
Y1 IN
C1 IN
Y2 IN
C2 IN
CVBS1 IN
CVBS2 IN
CVBS3 IN
CVBS4 IN
CVBS5 IN
COMB YIN
COMB CIN
MON OUT
CVBS OUT
C OUT
ABLFIL
ABLIN
IKIN
BOUT
GOUT
ROUT
SDA
SCL
VDN
VDP
EW
H-VD
TC2
TC1
APCFIL
SCP
VTIM
HP/HPROT
HD
GND1
IREF
REG
VCC1
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56
59
53
49
21
8
50
52
51
64
62
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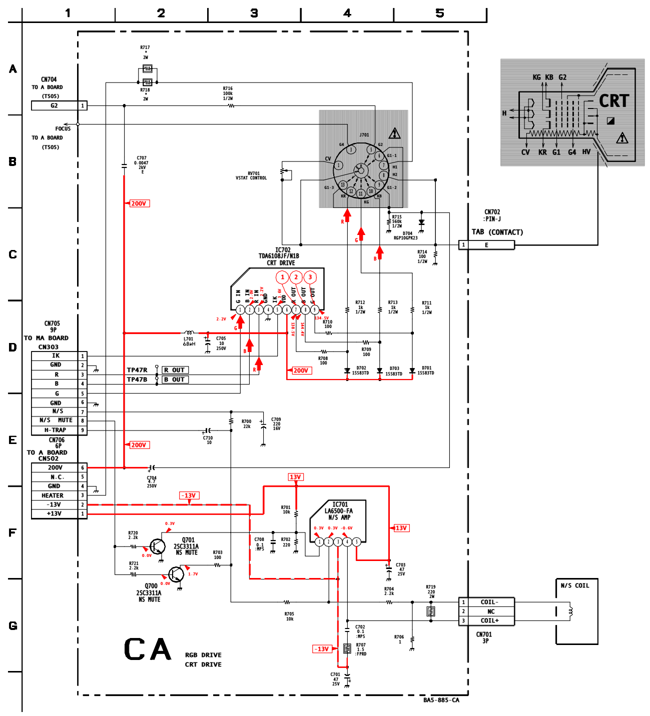
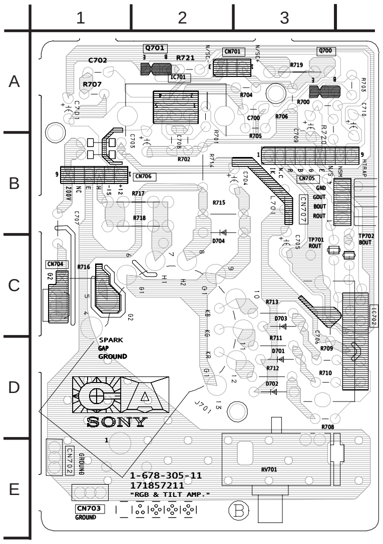
16
33
34
27
32

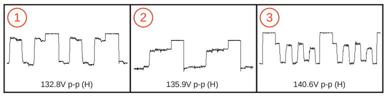
CA BOARD SCHEMATIC DIAGRAM



CA [RGB DRIVE, CRT DRIVE]



CA BOARD WAVEFORMS

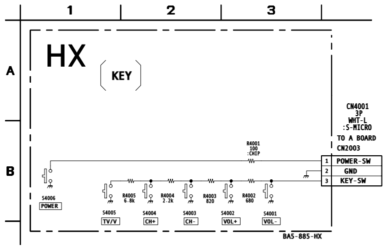


CA BOARD MARK (*) LIST

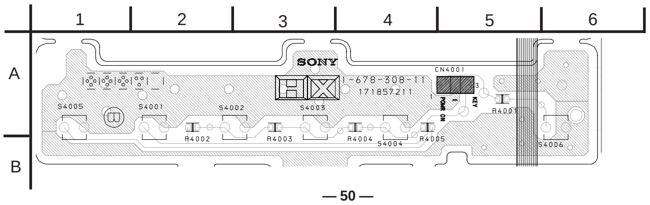
REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16
R717	A-2	2.2 2W	#
R718	A-2	#	3.3 2W

#: Not Mounted

HX BOARD SCHEMATIC DIAGRAM

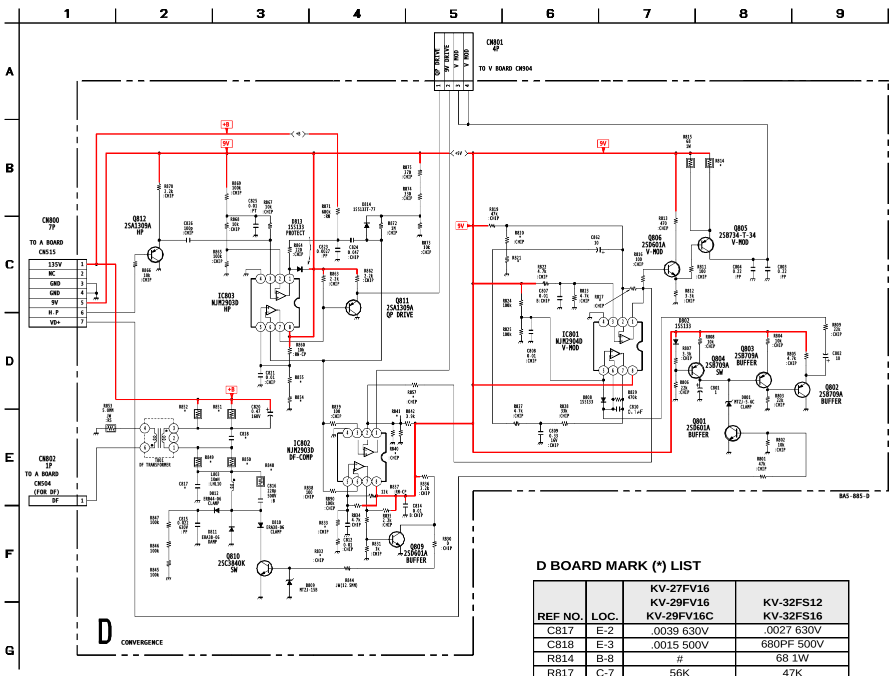


HX [KEY]



MA Board CA & HX Boards

D BOARD SCHEMATIC DIAGRAM



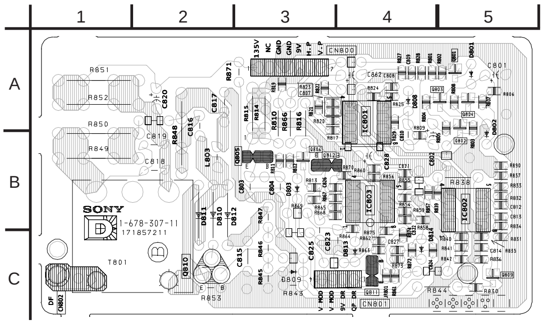
D BOARD MARK (*) LIST

REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16
C817	E-2	.0039 630V	.0027 630V
C818	E-3	.0015 500V	680PF 500V
R814	B-8	#	68 1W
R817	C-7	56K	47K
R820	C-6	22K	33K
R821	C-5	15K	3.3K
R832	F-4	5.6K	3.3K
R833	F-4	33K	39K
R840	E-4	68K	#
R841	E-4	6.8K	10K
R848	E-3	15K 1W	2.2K 2W
R849	E-3	3.3K 3W	8.2K 3W
R850	E-3	#	8.2K 3W
R851	E-3	2.2K 2W	6.8K 3W
R852	E-2	#	6.8K 3W
R854	D-3	6.8K	5.6K
R855	D-3	47K	56K
R857	D-4	#	33K

#: Not Mounted

D

[CONVERGENCE]



D BOARD TRANSISTOR VOLTAGE LIST

Q801		Q806	
pin	volt	pin	volt
B	-2.2	B	7.3
C	3.4	C	8.1
E	GND	E	6.7
Q802		**Q809**	
pin	volt	pin	volt
B	4.3	B	0.3
C	GND	C	0.3
E	4.9	E	GND
Q803		**Q810**	
pin	volt	pin	volt
B	6.4	B	0.3
C	4.3	C	1.2
E	7.0	E	GND
Q804		**Q811**	
pin	volt	pin	volt
B	7.4	B	6.3
C	6.4	C	GND
E	7.9	E	6.4
Q805		**Q812**	
pin	volt	pin	volt
B	6.7	B	0.0
C	0.6	C	GND
E	7.3	E	0.6

All voltages are in V

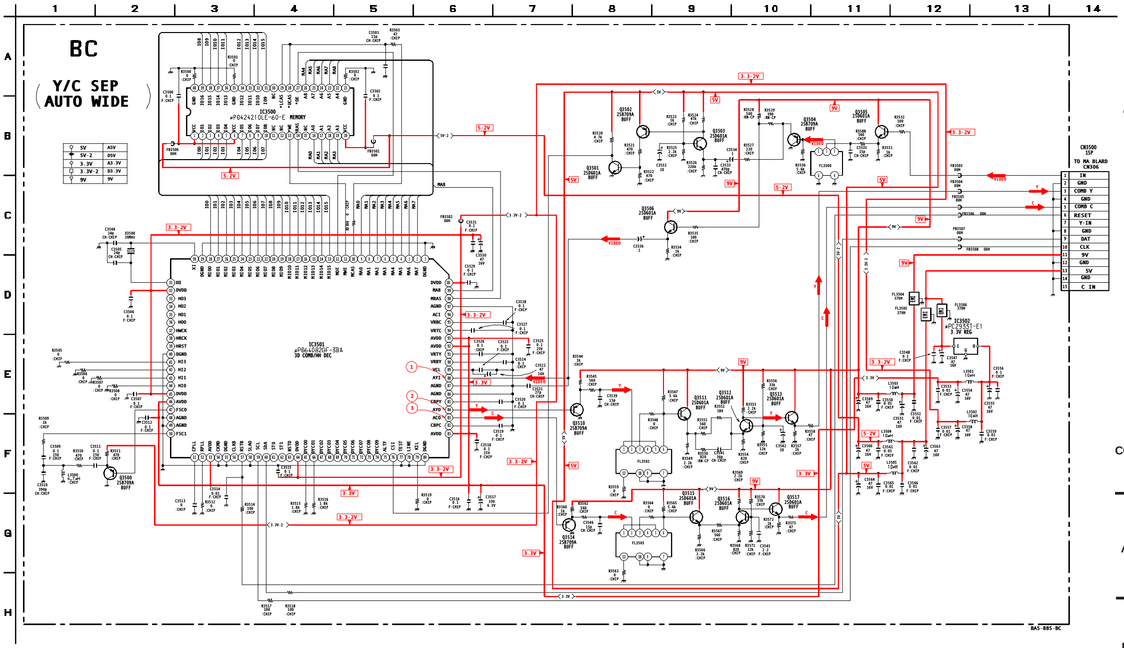
D BOARD IC VOLTAGE LIST

IC801		IC803	
pin	volt	pin	volt
1	7.3	1	2.3
2	4.4	2	4.3
3	4.5	3	4.7
4	GND	4	GND
5	4.5	5	7.6
6	4.5	6	6.7
7	4.5	7	6.0
8	9.0	8	9.0

All voltages are in V

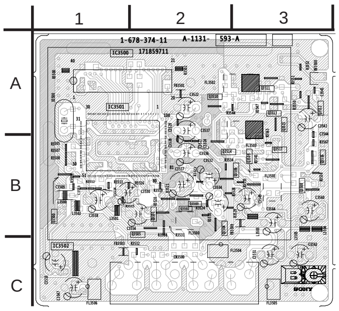
IC802	
pin	volt
1	6.8
2	5.7
3	0.0
4	GND
5	6.8
6	6.7
7	3.2
8	9.0

BC BOARD SCHEMATIC DIAGRAM

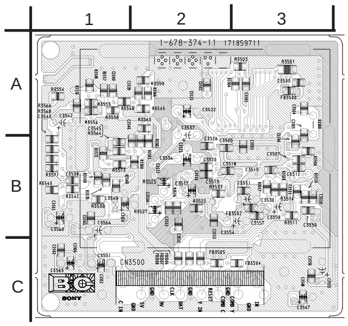


BC [Y/C SEP, AUTO WIDE]

COMPONENT SIDE



CONDUCTOR SIDE



BC BOARD IC VOLTAGE LIST

IC3500		16	1.5	33	1.1	8	1.5	25	0.9	42	0.0	59	4.8	76	3.3	93	3.3
pin	volt	17	1.5	34	1.1	9	1.5	26	0.9	43	0.0	60	4.8	77	GND	94	3.3
1	5.0	18	1.5	35	GND	10	1.0	27	0.9	44	0.0	61	NC	78	GND	95	2.0
2	0.8	19	1.5	36	1.1	11	2.9	28	0.8	45	3.3	62	NC	79	0.0	96	NC
3	0.9	20	5.0	37	1.1	12	2.4	29	GND	46	3.3	63	NC	80	GND	97	0.0
4	0.9	21	GND	38	1.0	13	0.3	30	1.5	47	1.8	64	3.3	81	3.3	98	0.5
5	0.9	22	1.6	39	0.1	14	1.1	31	1.6	48	GND	65	0.7	82	1.1	99	1.6
6	5.0	23	1.5	40	GND	15	1.1	32	3.3	49	GND	66	1.5	83	1.7	100	3.3
7	0.8	24	1.5	**IC3501**		16	1.1	33	NC	50	1.5	67	NC	84	1.4	**IC3501**	
8	0.7	25	1.5	pin	volt	17	1.1	34	NC	51	0.0	68	NC	85	1.1	pin	volt
9	1.4	26	1.5	1	GND	18	1.1	35	NC	52	0.0	69	NC	86	0.0	G	GND
10	1.1	27	2.4	2	1.5	19	1.0	36	NC	53	3.3	70	NC	87	0.0	I	5.0
11	NC	28	1.1	3	1.5	20	0.1	37	NC	54	GND	71	NC	88	0.9	O	3.3
12	NC	29	1.1	4	1.5	21	1.1	38	NC	55	GND	72	NC	89	0.9		
13	2.9	30	0.0	5	1.5	22	1.4	39	NC	56	NC	73	NC	90	1.0		
14	0.5	31	0.3	6	1.5	23	0.7	40	GND	57	3.3	74	NC	91	1.6		
15	NC	32	1.1	7	1.5	24	0.8	41	0.0	58	GND	75	NC	92	3.3		

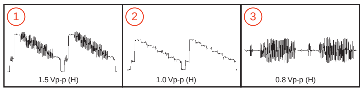
All voltages are in V

BC BOARD TRANSISTOR VOLTAGE LIST

Q3500		**Q3504**		**Q3511**		**Q3515**	
pin	volt	pin	volt	pin	volt	pin	volt
B	1.8	B	3.9	B	3.0	B	3.0
C	0.0	C	GND	C	8.9	C	8.9
E	2.4	E	4.5	E	2.4	E	2.3
Q3501		**Q3505**		**Q3512**		**Q3516**	
pin	volt	pin	volt	pin	volt	pin	volt
B	0.2	B	5.0	B	2.3	B	2.4
C	3.3	C	8.9	C	5.5	C	6.5
E	GND	E	4.3	E	1.7	E	1.7
Q3502		**Q3506**		**Q3513**		**Q3517**	
pin	volt	pin	volt	pin	volt	pin	volt
B	4.7	B	6.3	B	5.5	B	6.5
C	0.8	C	8.9	C	8.9	C	8.9
E	5.0	E	5.7	E	4.9	E	5.8
Q3503		**Q3510**		**Q3514**			
pin	volt	pin	volt	pin	volt		
B	3.5	B	1.4	B	1.7		
C	4.7	C	GND	C	0.0		
E	3.7	E	2.1	E	2.4		

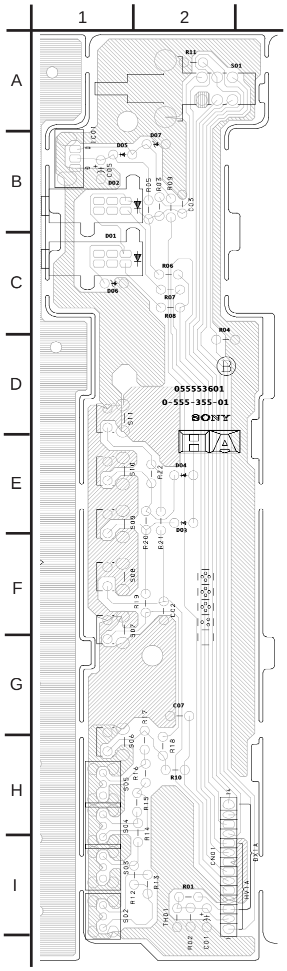
All voltages are in V

BC BOARD WAVEFORMS

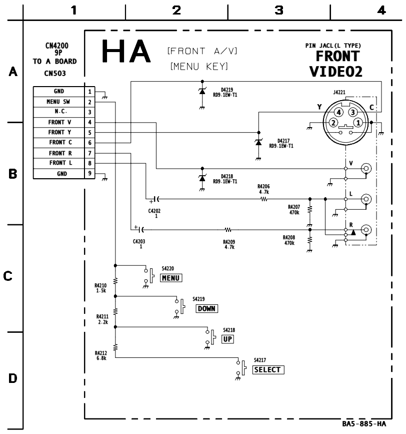


← D Board BC Board →

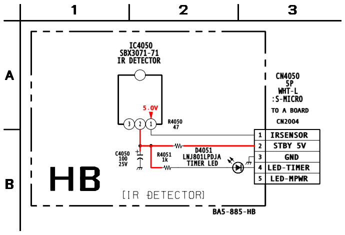
HA [FRONT A/V, MENU KEY]



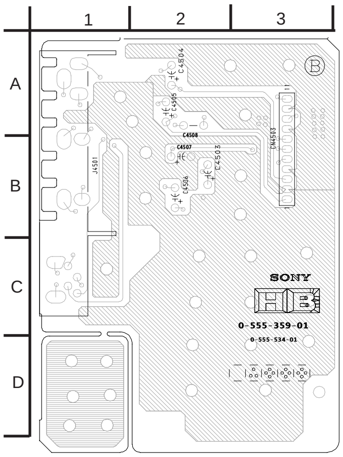
HA BOARD SCHEMATIC DIAGRAM



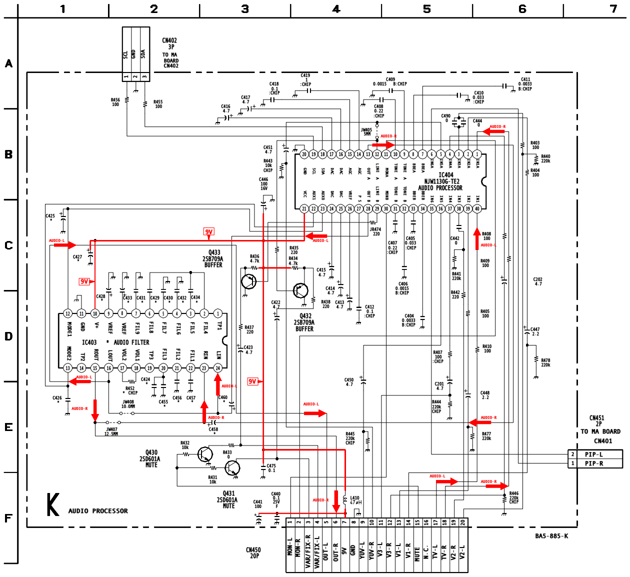
HB BOARD SCHEMATIC DIAGRAM



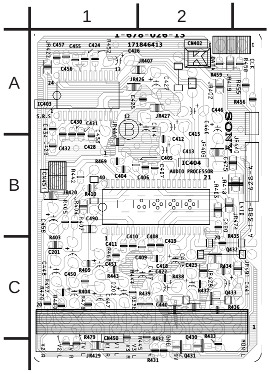
HB [IR DETECTOR]



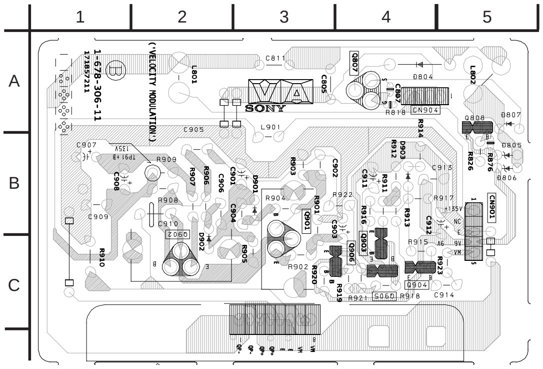
K BOARD SCHEMATIC DIAGRAM



K [AUDIO PROCESSOR]



VA [VELOCITY MODULATOR]



K BOARD TRANSISTOR VOLTAGE LIST

Q430		Q431		Q432		Q433	
pin	volt	pin	volt	pin	volt	pin	volt
B	0.3	B	0.3	B	4.5	B	4.5
C	0.0	C	0.0	C	GND	C	GND
E	GND	E	GND	E	5.1	E	5.2

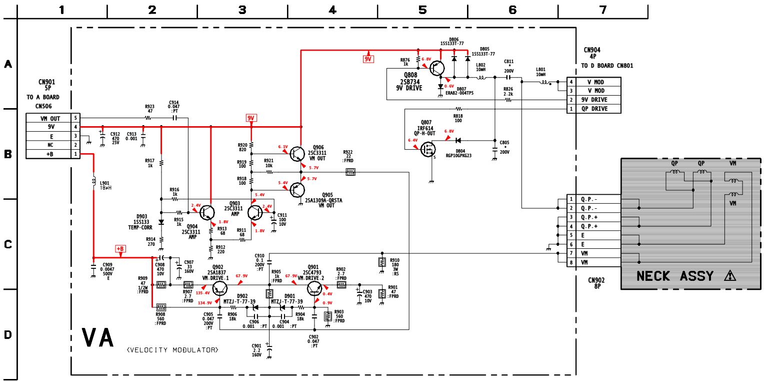
All voltages are in V

VA BOARD MARK(*) LIST

REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16
C805	B-6	.033UF 200V	.01UF 630V
C811	A-6	.047UF 200V	.082UF 200V

#: Not Mounted

VA BOARD SCHEMATIC DIAGRAM



K BOARD IC VOLTAGE LIST

IC403		16	4.5	7	4.7	24	1.3
pin	volt	17	4.5	8	4.5	25	1.3
1	NC	18	4.5	9	4.5	26	4.4
2	4.5	19	NC	10	4.5	27	3.9
3	4.5	20	4.5	11	NC	28	4.5
4	4.5	21	4.5	12	4.5	29	4.5
5	4.5	22	4.5	13	4.5	30	NC
6	4.5	23	4.5	14	1.0	31	4.5
7	4.5	24	4.5	15	4.5	32	4.5
8	4.5	IC404		16	0.9	33	4.5
9	4.5	pin	volt	17	0.9	34	4.5
10	9.0	1	4.5	18	4.8	35	NC
11	GND	2	4.5	19	4.9	36	4.5
12	0	3	4.5	20	GND	37	4.5
13	0	4	4.5	21	8.9	38	4.5
14	NC	5	4.5	22	NC	39	4.5
15	4.5	6	NC	23	NC	40	4.5

All voltages are in V

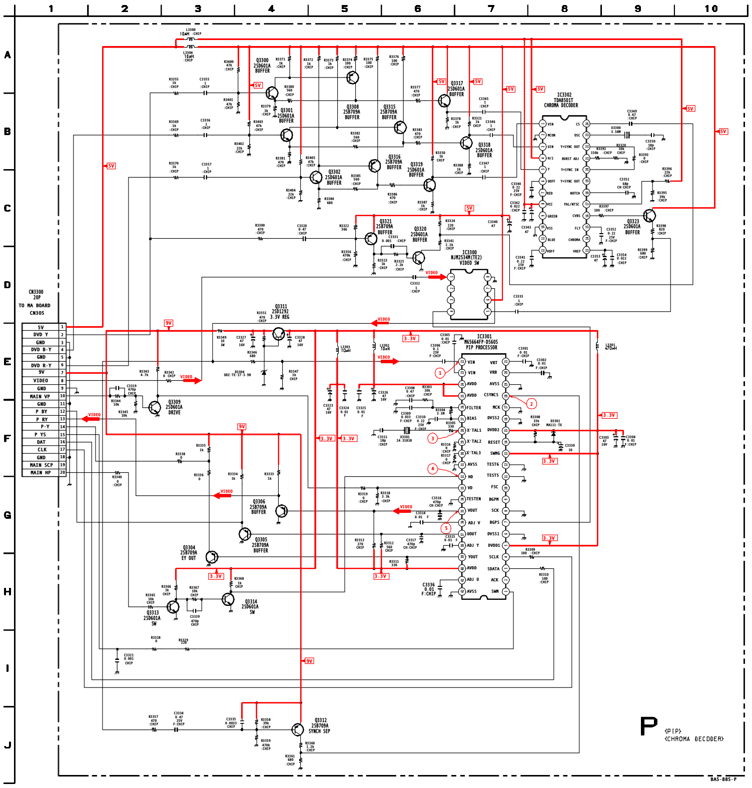
K BOARD MARK (*) LIST

REF NO.	LOC.	KV-27FV16 KV-29FV16 KV-29FV16C	KV-32FS12 KV-32FS16
C424	E-2	.47 25V	#
C425	C-1	1 16V	#
C426	E-2	1	#
C427	C-1	100	#
C428	D-2	100	#
C429	D-2	0.0047	#
C430	D-2	.22 25V	#
C431	D-2	.1 25V	#
C432	D-2	0.01	#
C433	D-2	1 16V	#
C434	D-2	.1 25V	#
C455	E-2	.4725V	#
C456	E-2	0.01	#
C457	E-2	0.033	#
C458	E-3	4.7	#
C460	E-3	4.7	#
IC403	D-1	NJM2198-TE2	#
R452	E-2	10K	#

#: Not Mounted

← HA & HB Boards K & VA Boards →

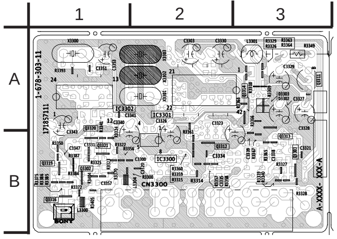
P BOARD SCHEMATIC DIAGRAM



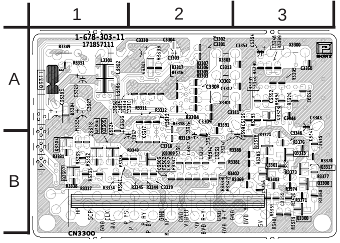
P

[PIP, CHROMA DECODER]

COMPONENT SIDE



CONDUCTOR SIDE



P BOARD IC VOLTAGE LIST

IC3300		29	0.0
pin	volt	30	0.0
1	2.6	31	0.0
2	NC	32	0.5
3	NC	33	0.0
4	0.0	34	GND
5	2.6	35	3.1
6	5.0	36	1.1
7	1.8	37	3.0
8	GND	38	1.2
IC3301		39	2.6
pin	volt	40	3.5
1	0.2	41	1.0
2	GND	42	GND
3	4.7	**IC3302**	
4	4.8	pin	volt
5	3.2	1	0.0
6	GND	2	GND
7	0.0	3	0.0
8	GND	4	5.0
9	NC	5	0.3
10	NC	6	2.0
11	GND	7	NC
12	GND	8	5.1
13	3.2	9	NC
14	3.2	10	GND
15	3.2	11	NC
16	GND	12	2.0
17	GND	13	2.5
18	0.3	14	NC
19	GND	15	0.8
20	0.5	16	1.7
21	1.6	17	3.3
22	1.0	18	1.7
23	0.6	19	NC
24	3.4	20	1.7
25	3.4	21	2.5
26	1.4	22	1.7
27	1.7	23	1.3
28	2.0	24	1.9

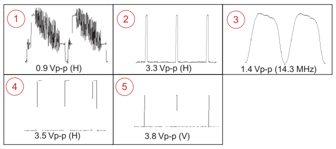
All voltages are in V

P BOARD TRANSISTOR VOLTAGE LIST

Q3300		**Q3305**		**Q3311**		**Q3315**		**Q3319**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	2.4	B	3.0	B	4.1	B	4.2	B	1.9
C	4.2	C	GND	C	7.7	C	2.4	C	3.8
E	1.8	E	3.7	E	3.5	E	4.8	E	1.3
Q3301		**Q3306**		**Q3312**		**Q3316**		**Q3320**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	1.6	B	3.1	B	8.8	B	0.0	B	0.0
C	4.2	C	GND	C	0.7	C	1.9	C	5.0
E	1.0	E	3.8	E	9.0	E	4.9	E	GND
Q3302		**Q3308**		**Q3313**		**Q3317**		**Q3321**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	1.6	B	4.2	B	0.2	B	2.9	B	4.7
C	4.3	C	2.9	C	2.7	C	5.0	C	0.0
E	1.0	E	4.9	E	GND	E	2.3	E	5.0
Q3304		**Q3309**		**Q3314**		**Q3318**		**Q3323**	
pin	volt	pin	volt	pin	volt	pin	volt	pin	volt
B	2.6	B	0.7	B	0.5	B	2.4	B	1.8
C	GND	C	0.0	C	0.6	C	3.3	C	5.0
E	3.3	E	GND	E	GND	E	1.8	E	1.1

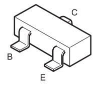
All voltages are in V

P BOARD WAVEFORMS

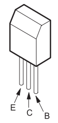


6-4. SEMICONDUCTORS

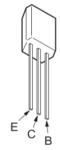
2SA1037AK-7146-QR
2SB709A-QRS-TX
2SD601A-QRS-TX
2SC2412K-T-146-QR



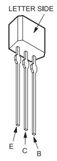
2SB734-7-34
2SC3209LK-TP



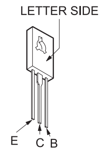
2SC1740S-QRT



2SA1309A-QRSTA
2SC3311A-QRSTA
2SD2144S-TP-UVW



2SC3840K



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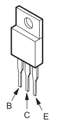
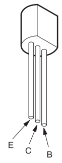
2SC4159-E



2SA1091O-TPE2
2SA993AS-QRT



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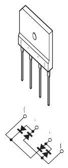
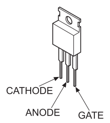
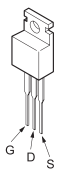


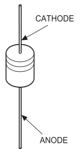
TF541M



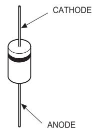
IRF614



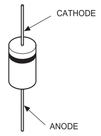
ERA38-06TP1
ERA82-004TP5
1SS133T-77
D1N2OR-TA
D1NS4-TA
MTZJ-T-7712C
MTZJ-T-77-33B
MTZJ-T-77-39



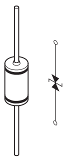
RU-1P
ERC06-15S
MTZJ-T-77-5.1C
MTZJ-T-775.6C
MTZJ-T-77-7.5A
MTZJ-T-77-10B
MTZJ-T-7730D
RD10ES-T1B
RGP10-GPKG3
RGP02-17PKG23



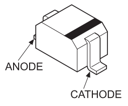
ERB44-06TP1
1SS83TD
D1NL2OU-TA
EL1Z-V1
ERA22-08TP3
GP08DPKG23
RGP10GPKG23
RU4AM-T3



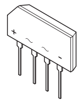
RD9.1EW-T1



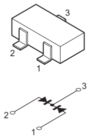
MA111-TX



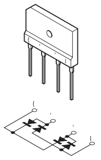
D2SB60A-F04



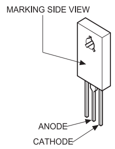
DAP202K-T-146



D4SB60L-F



D5LC20U



SECTION 7
EXPLODED VIEW

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The component parts of an assembly are indicated by the reference numbers in the remarks column.
- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note:

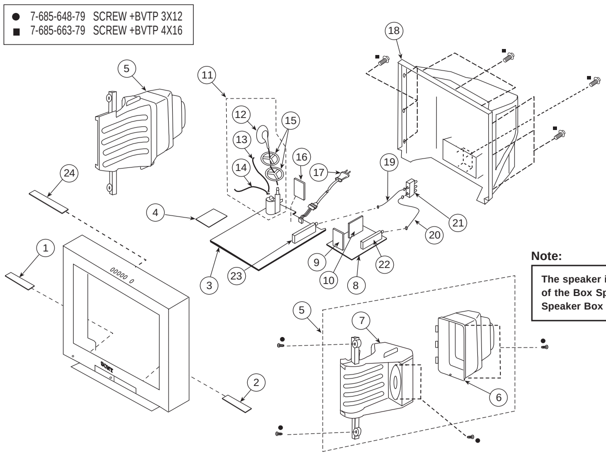
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

7-1. CHASSIS (KV-27FV16/29FV16/29FV16 ONLY)

● 7-685-648-79 SCREW +BVTP 3X12
■ 7-685-663-79 SCREW +BVTP 4X16



Note:

The speaker itself is part of the Box Speaker/1 Way Speaker Box

REF. NO.		PART NO.	DESCRIPTION	REMARK
1	*	A-1372-825-A	HA MOUNTED PC BOARD	
2	*	A-1372-826-A	HB (VAR) MOUNTED PC BOARD	
3	*	A-1299-244-A	A COMPLETE PC BOARD (KV-29FV16/29FV16C ONLY)	
3	*	A-1299-243-A	A COMPLETE PC BOARD (KV-27FV16 ONLY)	
			The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. (See 12-14)	
4	*	A-1343-875-A	D (VAR) MOUNTED PC BOARD	
5	*	1-529-336-11	BOX, 1 WAY SPEAKER (10CM) (KV-29FV16/29FV26C ONLY)	6-7
5	*	1-529-358-11	SPEAKER, BOX (5,10CM) (KV-27FV16 ONLY)	6-7
6	*	4-068-987-01	COVER, SPEAKER	
7		4-068-988-01	BAFFLE, SPEAKER	
8	*	A-1304-202-A	MA (VAR) MOUNTED PC BOARD	
9	*	A-1190-367-A	P MOUNTED PC BOARD	
10	*	A-1131-593-A	BC MOUNTED PC BOARD	
11	⚠	1-453-310-11	FBT ASSY NX-4521//X4J4	12-14
12		1-251-374-13	HV CAP ASSY	
13		1-900-800-82	FOCUS LEAD	
14		1-900-803-22	G2 LEAD	
15		3-704-372-71	HOLDER, HV CABLE	
16	*	A-1380-633-A	K (VAR) MOUNTED PC BOARD	
17	⚠	1-792-874-11	CORD, AC POWER(WITH CONNECTOR) (KV-27FV16 ONLY)	
17	⚠	1-790-316-21	CORD, AC POWER(WITH CONNECTOR) (KV-29FV16 ONLY)	
17	⚠	1-769-796-31	CORD, POWER (WITH CONNECTOR) (KV-29FV16C ONLY)	
18		4-076-875-01	COVER, REAR	
19	*	1-557-056-31	CABLE, P-P	
20	*	1-783-800-11	CABLE, PIN	
21		8-598-414-20	CHANGER, ANTENNA AS-2F	
22	⚠	8-598-501-00	TUNER, FSS BTF-FA402	
23	⚠	8-598-431-30	TUNER, FSS BTF-WA411	
24	*	A-1372-817-A	HX MOUNTED PC BOARD	

Note:

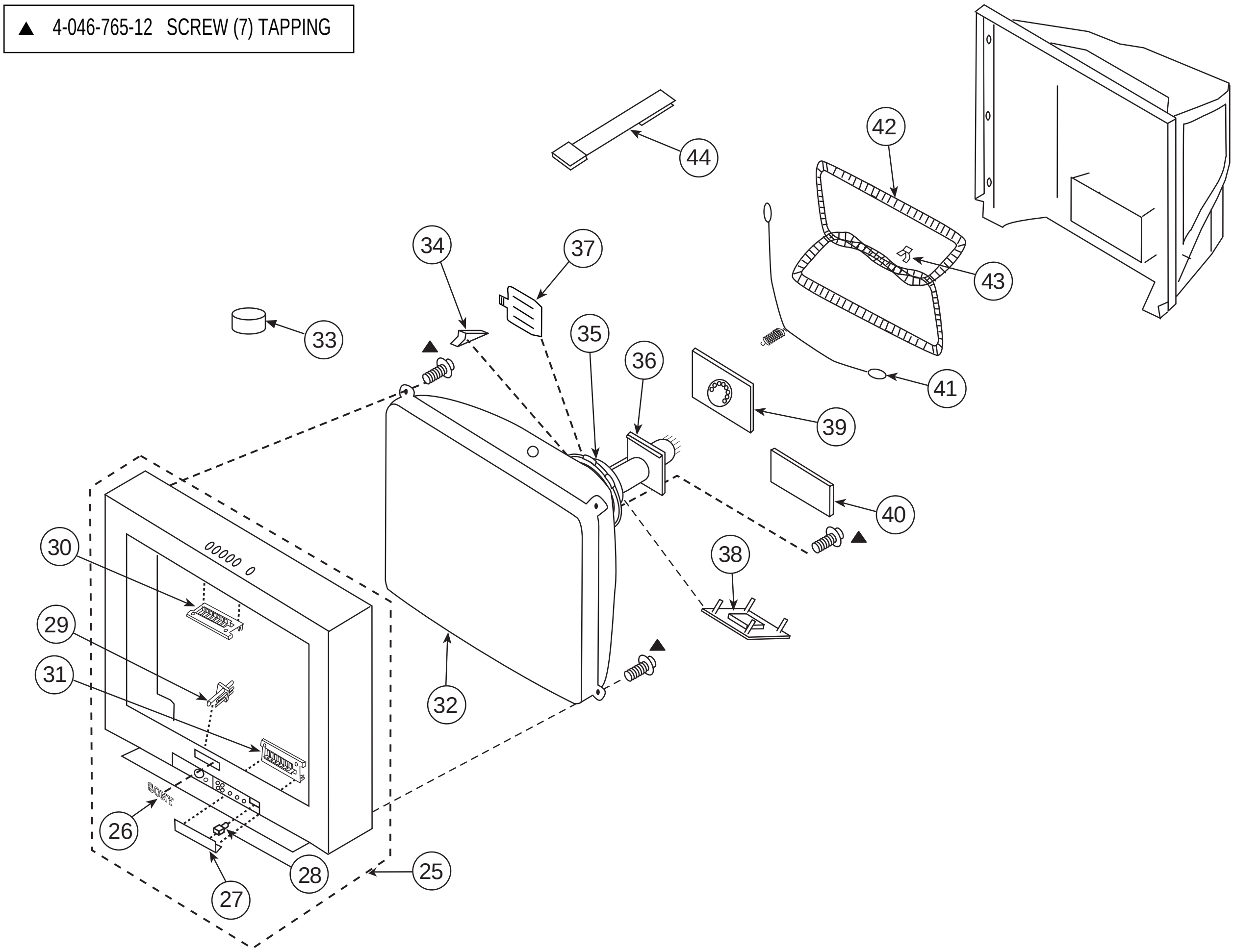
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

7-2. PICTURE TUBE (KV-27FV16/29FV16/29FV16 ONLY)

▲ 4-046-765-12 SCREW (7) TAPPING



REF. NO.		PART NO.	DESCRIPTION	REMARK
25		X-4037-842-1	BEZNET ASSY	26-28
26		3-704-179-31	EMBLEM (NO.9), SONY	
27		4-068-985-04	DOOR	
28		3-703-574-00	RETAINER, DOOR	
29		4-068-986-11	GUIDE, LED	
30		4-068-982-02	MULTI-BUTTON (TOP)	
31		4-068-984-01	MULTI-BUTTON (BOTTOM)	
32	⚠	8-735-041-05	CRT 29RSN (KV-27FV16/29FV16 ONLY)	
32	⚠	8-735-052-05	CRT 29RSN(FOR EQUATORIAL AREA) (KV-29FV16C ONLY)	
33		1-452-032-00	MAGNET,DISC	
34		4-053-005-01	SPACER, DY	
35	⚠	8-451-494-31	DY Y29RSA-S	
36	⚠	8-453-011-11	NA299-M	
37		2-163-920-01	PLATE, TLH CORRECTION	
38		1-452-896-11	COIL, NA ROTATION (RT200)	
39	*	A-1332-063-A	CA (VAR) MOUNTED PC BOARD	
40	*	A-1342-550-A	VA (VAR) MOUNTED PC BOARD	
41		4-036-329-01	SPRING (B), TENSION	
42	⚠	1-419-156-11	COIL, DEGUASSING (KV-27FV16 ONLY)	
42	⚠	1-419-523-21	COIL, DEGAUSSING (KV-29FV16/29FV16C ONLY)	
43	*	4-062-970-01	CLIP (29RSN), DGC	
44		4-062-047-01	PIECE A(110), CONV CORRECT	

Note:

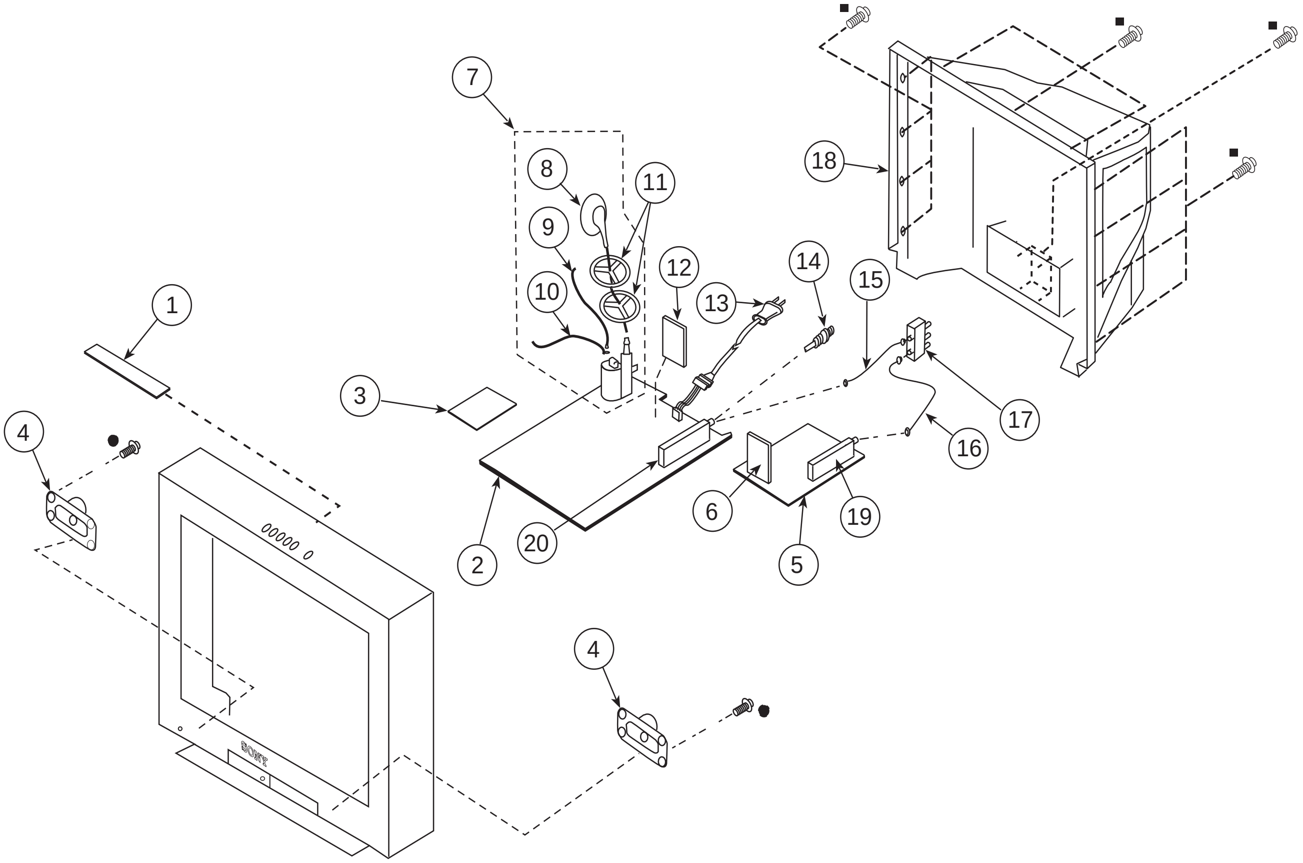
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

7-3. CHASSIS (KV-32FS12/32FS16 ONLY)

● 7-685-648-79 SCREW +BVTP 3X12
■ 7-685-663-79 SCREW +BVTP 4X16



REF. NO.		PART NO.	DESCRIPTION	REMARK
1	*	A-1372-817-A	HX MOUNTED PC BOARD	
2	*	A-1299-218-A	A COMPLETE PC BOARD The high-voltage leads associated with the FBT on this board are not included and must be ordered separately. (See 8-10)	
3	*	A-1343-874-A	D (VAR) MOUNTED PC BOARD	
4		1-529-498-11	SPEAKER (13.1X6.2CM)	
5	*	A-1304-203-A	MA (VAR) MOUNTED PC BOARD (KV-32FS12 ONLY)	
5	*	A-1304-196-A	MA (VAR) MOUNTED PC BOARD (KV-32FS16 ONLY)	
6	*	A-1190-367-A	P MOUNTED PC BOARD (KV-32FS16 ONLY)	
7	⚠	1-453-338-11	FBT ASSY NX-4600//X4J4	8-10
8		1-251-374-13	HV CAP ASSY	
9		1-900-800-82	FOCUS LEAD	
10		1-900-803-50	G2 LEAD	
11		3-704-372-71	HOLDER, HV CABLE	
12	*	A-1380-632-A	K (VAR) MOUNTED PC BOARD	
13	⚠	1-792-874-11	CORD, AC POWER(WITH CONNECTOR)	
14		1-766-374-11	PLUG, F-PIN (KV-32FS12 ONLY)	
15	*	1-557-056-31	CABLE, P-P (KV-32FS16 ONLY)	
16	*	1-783-800-11	CABLE, PIN (KV-32FS16 ONLY)	
17		8-598-414-20	CHANGER, ANTENNA AS-2F (KV-32FS16 ONLY)	
18		4-075-654-11	COVER, REAR	
19	⚠	8-598-501-00	TUNER, FSS BTF-FA402 (KV-32FS16 ONLY)	
20	⚠	8-598-431-30	TUNER, FSS BTF-WA411	

Note:

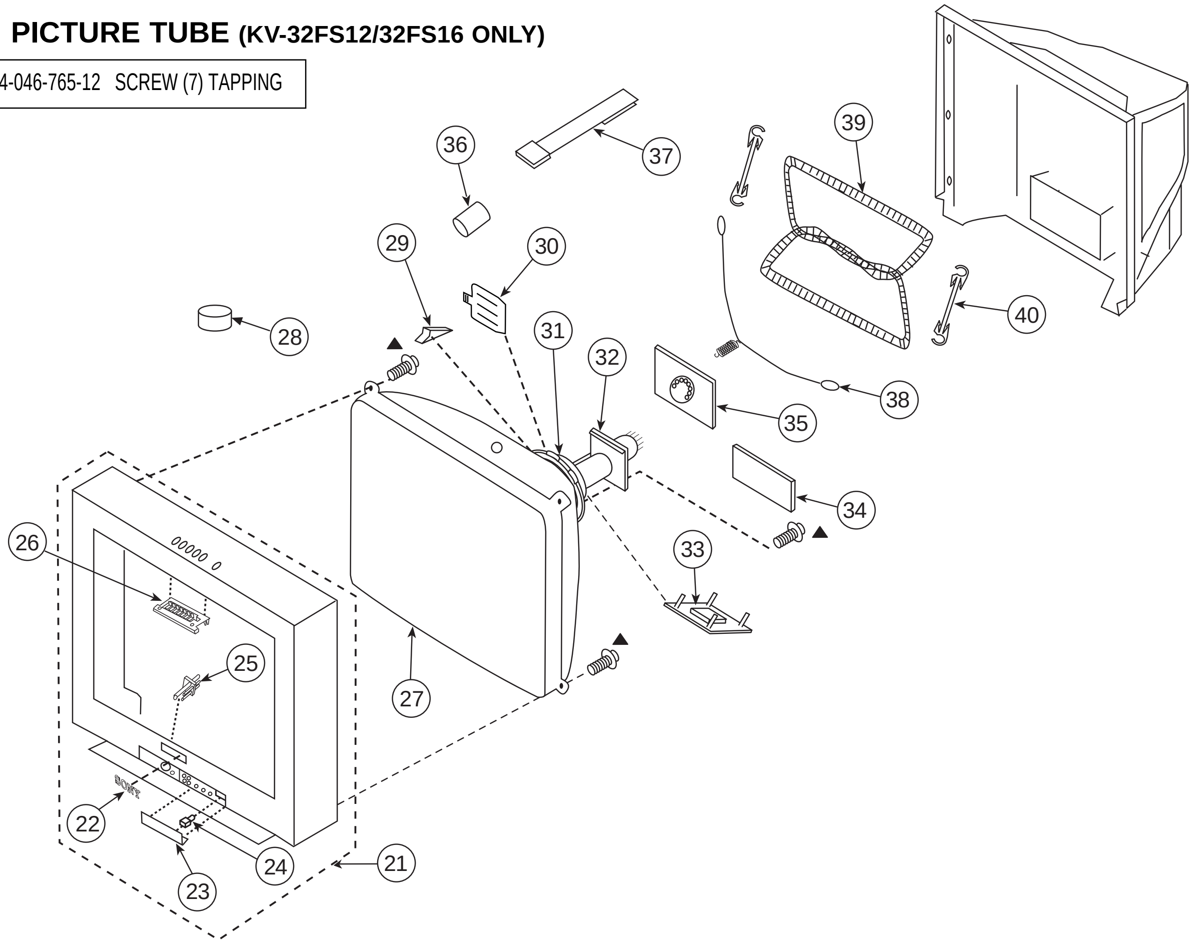
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

7-4. PICTURE TUBE (KV-32FS12/32FS16 ONLY)

▲ 4-046-765-12 SCREW (7) TAPPING



REF. NO.		PART NO.	DESCRIPTION	REMARK
21		X-4037-664-1	BEZNET ASSY	22-25
22		3-704-179-31	EMBLEM (NO.9), SONY	
23		4-075-658-01	DOOR	
24		4-047-464-01	CATCHER, PUSH	
25		4-075-657-01	GUIDE, LED	
26		4-068-982-02	MULTI-BUTTON (TOP)	
27	⚠	8-735-066-05	CRT 34RSN(SDP)	
28		1-452-032-00	MAGNET,DISC	
29		4-053-005-01	SPACER, DY	
30		2-163-920-01	PLATE, TLH CORRECTION	
31	⚠	8-451-499-21	DY Y34RSA-X	
32	⚠	8-453-007-41	NA324-M4	
33		1-452-896-11	COIL, NA ROTATION (RT200)	
34	*	A-1342-549-A	VA (VAR) MOUNTED PC BOARD	
35	*	A-1332-061-A	CA (VAR) MOUNTED PC BOARD	
36		1-500-586-11	FILTER, CLAMP (FERRITE CORE)	
37		4-062-047-01	PIECE A(110), CONV CORRECT	
38		4-036-329-01	SPRING (B), TENSION	
39	⚠	1-416-827-21	COIL, DEGAUSSING	
40		4-065-895-03	HOLDER, DGC	

SECTION 8
ELECTRICAL PARTS LIST

A

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- Items marked * are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

A

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-1299-243-A	A COMPLETE PC BOARD (KV-27FV16 ONLY)	
*	A-1299-244-A	A COMPLETE PC BOARD (KV-29FV16/29FV16C ONLY)	
*	A-1299-218-A	A COMPLETE PC BOARD (KV-32FS12/32FS16 ONLY)	

The high voltage leads associated with the FBT on this board are not included and must be ordered separately. Order the following leads when requesting this A Board:

	1-251-374-13	HV CAP ASSY
	1-900-803-22	G2 LEAD (All EXCEPT KV-32FS12/32FS16)
	1-900-803-50	G2 LEAD (KV-32FS12/32FS16 ONLY)
	1-900-800-82	FOCUS LEAD
	1-533-223-11	HOLDER, FUSE
*	4-374-846-01	COVER, CAPACITOR, CAP TYPE
	4-382-854-11	SCREW (M3X10), P, SW (+)

CAPACITOR

REF. NO.		PART NO.	DESCRIPTION		REMARK	
C100		1-216-295-91	SHORT			
C101		1-216-295-91	SHORT			
C102		1-126-933-11	ELECT	100µF	20%	16V
C104		1-126-941-11	ELECT	470µF	20%	25V
C105		1-104-664-11	ELECT	47µF	20%	25V
C204		1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C205		1-126-963-11	ELECT	4.7µF	20%	50V
C210		1-126-963-11	ELECT	4.7µF	20%	50V
C211		1-126-935-11	ELECT	470µF	20%	16V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C212		1-126-963-11	ELECT	4.7µF	20%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C213		1-126-963-11	ELECT	4.7µF	20%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C214		1-164-346-11	CERAMIC CHIP	1µF		16V
C215		1-164-346-11	CERAMIC CHIP	1µF		16V
C216		1-126-963-11	ELECT	4.7µF	20%	50V
C219		1-126-964-11	ELECT	10µF	20%	50V
C401		1-126-968-11	ELECT	100µF	20%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C402		1-126-972-11	ELECT	1000µF	20%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C402		1-126-943-11	ELECT	2200µF	20%	25V
			(KV-32FS12/32FS16 ONLY)			
C403		1-126-957-11	ELECT	0.22µF	20%	50V
C420		1-164-222-11	CERAMIC CHIP	0.22µF		25V
C421		1-164-222-11	CERAMIC CHIP	0.22µF		25V
C435		1-164-222-11	CERAMIC CHIP	0.22µF		25V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C441		1-164-346-11	CERAMIC CHIP	1µF		16V
C442		1-126-963-11	ELECT	4.7µF	20%	50V
C501		1-102-114-00	CERAMIC	470PF	10%	50V
C502		1-106-383-00	MYLAR	0.047µF	10%	200V
C503		1-102-228-00	CERAMIC	470PF	10%	500V
C504		1-102-228-00	CERAMIC	470PF	10%	500V
C505	⚠	1-162-116-00	CERAMIC	680PF	10%	2KV
C506		1-162-318-11	CERAMIC	0.001µF	10%	500V
C507	⚠	1-117-717-11	FILM	17000PF	3%	1.2KV
			(KV-27FV16/29FV16/29FV16C ONLY)			
C507	⚠	1-117-652-11	FILM	22000PF	3%	1.2KV
			(KV-32FS12/32FS16 ONLY)			
C508	⚠	1-137-150-11	MYLAR	0.01µF	10%	100V
C509	⚠	1-162-116-00	CERAMIC	680PF	10%	2KV
C510		1-107-649-11	ELECT	2.2µF	20%	250V
C511	⚠	1-115-522-11	FILM	1µF	5%	250V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C511	⚠	1-115-521-11	FILM	0.82µF	5%	250V
			(KV-32FS12/32FS16 ONLY)			
C512	⚠	1-106-387-00	MYLAR	0.068µF	10%	200V
C513		1-104-987-11	MYLAR	0.001µF	10%	100V
C514		1-109-844-11	FILM	0.68µF	5%	250V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C514		1-115-521-11	FILM	0.82µF	5%	250V
			(KV-32FS12/32FS16 ONLY)			
C515	⚠	1-162-116-00	CERAMIC	680PF	10%	2KV

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.		PART NO.	DESCRIPTION	REMARK		
C517		1-107-846-11	FILM	0.1µF	5%	250V
			(KV-32FS12/32FS16 ONLY)			
C520	⚠	1-129-722-00	FILM	0.047µF	5%	630V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C520	⚠	1-130-118-91	FILM	0.051µF	5%	400V
			(KV-32FS12/32FS16 ONLY)			
C521		1-164-646-11	CERAMIC	2200PF	10%	500V
C523		1-126-941-11	ELECT	470µF	20%	25V
C524		1-102-244-00	CERAMIC	220PF	10%	500V
C525		1-107-612-11	CERAMIC	100PF	5%	500V
C526		1-126-960-11	ELECT	1µF	20%	50V
C527		1-126-965-11	ELECT	22µF	20%	50V
C528		1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C529		1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C530		1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C530		1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
			(KV-32FS12/32FS16 ONLY)			
C531		1-106-387-00	MYLAR	0.068µF	10%	200V
C533		1-126-941-11	ELECT	470µF	20%	25V
C534	⚠	1-126-964-11	ELECT	10µF	20%	50V
C535		1-126-959-11	ELECT	0.47µF	20%	50V
C536		1-102-228-00	CERAMIC	470PF	10%	500V
C537	⚠	1-126-965-11	ELECT	22µF	20%	50V
C539		1-107-662-11	ELECT	22µF	20%	250V
C540		1-107-645-11	ELECT	22µF	20%	160V
C541		1-126-969-11	ELECT	220µF	20%	50V
C542		1-126-967-11	ELECT	47µF	20%	50V
C543		1-136-169-00	MYLAR	0.22µF	5%	50V
C546	⚠	1-126-965-11	ELECT	22µF	20%	50V
C547	⚠	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C548		1-104-710-11	ELECT	22µF		160V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C548		1-107-995-11	ELECT	100µF		160V
			(KV-32FS12/32FS16 ONLY)			
C549		1-126-934-11	ELECT	220µF	20%	16V
C550		1-107-846-11	FILM	0.1µF	5%	250V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C550		1-117-667-11	FILM	0.47µF	5%	250V
			(KV-32FS12/32FS16 ONLY)			
C551	⚠	1-137-417-11	MYLAR	0.0047µF	10%	200V
C553		1-107-662-11	ELECT	22µF	20%	250V
C554		1-102-110-00	CERAMIC	220PF	10%	50V
C555	⚠	1-117-629-11	FILM	2700PF	3%	1.2KV
			(KV-27FV16/29FV16/29FV16C ONLY)			
C555		1-117-635-11	FILM	4700PF	3%	1.2KV
			(KV-32FS12/32FS16 ONLY)			
C601		1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C602		1-126-967-11	ELECT	47µF	20%	50V
C604		1-164-182-11	CERAMIC CHIP	0.0033µF	10%	50V
C606	⚠	1-127-795-51	CERAMIC	3300PF	20%	250V

REF.NO.		PART NO.	DESCRIPTION	REMARK		
C607	⚠	1-136-311-11	MYLAR	0.47µF	20%	300V
			(KV-29FV16/29FV16C ONLY)			
C607	⚠	1-136-311-11	MYLAR	0.47µF	20%	125V
			(ALL EXCEPT 29FV16/29FV16C)			
C609		1-126-968-11	ELECT	100µF	20%	50V
C610		1-126-964-11	ELECT	10µF	20%	50V
C611	⚠	1-127-795-51	CERAMIC	3300PF	20%	250V
C612	⚠	1-113-611-11	ELECT(BLOCK)	820µF	20%	250V
			(ALL EXCEPT KV-29FV16/29FV16C)			
C613		1-126-964-11	ELECT	10µF	20%	50V
C614		1-130-495-00	MYLAR	0.1µF	5%	50V
C615		1-130-202-00	FILM	0.022µF	10%	400V
			(KV-29FV16/29FV16C ONLY)			
C616		1-107-824-11	CERAMIC	220PF	5%	1KV
			(KV-29FV16/29FV16C ONLY)			
C617		1-125-893-11	FILM	680PF	3%	1.5KV
C618		1-164-081-11	CERAMIC	470PF	10%	50V
C619		1-136-356-11	MYLAR	470PF	5%	50V
C620		1-104-665-11	ELECT	100µF	20%	25V
C621		1-125-772-91	CERAMIC	1500PF	10%	2KV
C622		1-164-625-11	CERAMIC	680PF	10%	500V
C623		1-164-625-11	CERAMIC	680PF	10%	500V
C624		1-131-867-51	ELECT	100µF		160V
C625		1-135-572-51	ELECT	1000µF	20%	50V
			(KV-27FV16/29FV16/29FV16C ONLY)			
C625		1-135-412-51	ELECT	1000µF	20%	25V
			(KV-32FS12/32FS16 ONLY)			
C626		1-135-573-51	ELECT	15000µF	20%	25V
C627		1-136-189-00	MYLAR	0.1µF	10%	250V
C628		1-104-665-11	ELECT	100µF	20%	25V
C630		1-113-924-11	CERAMIC	0.0047µF	20%	250V
			(ALL EXCEPT KV-29FV16/29FV16C)			
C631		1-113-924-11	CERAMIC	0.0047µF	20%	250V
			(ALL EXCEPT KV-29FV16/29FV16C)			
C634		1-137-605-11	MYLAR	0.01µF	10%	250V
C635		1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C636		1-126-970-11	ELECT	330µF	20%	50V
C637		1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C638		1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C639		1-126-965-11	ELECT	22µF	20%	50V
C641		1-107-679-91	ELECT	10µF	20%	450V
C643		1-104-760-11	CERAMIC CHIP	0.047µF	10%	50V
C644		1-161-964-91	CERAMIC	0.0047µF		250V
C645		1-161-964-91	CERAMIC	0.0047µF		250V
C646		1-161-964-91	CERAMIC	0.0047µF		250V
C647		1-161-964-91	CERAMIC	0.0047µF		250V
C648		1-136-346-21	MYLAR	0.22µF	20%	300V
			(KV-29FV16/29FV16C ONLY)			
C648		1-136-346-21	MYLAR	0.22µF	20%	125V
			(ALL EXCEPT 29FV16/29FV16C)			

A

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REF.NO.		PART NO.	DESCRIPTION	REMARK		
C649		1-161-830-00	CERAMIC (KV-27FV16/29FV16/29FV16C ONLY)	0.0047µF	20%	500V
C652		1-130-471-00	MYLAR	0.001µF	5%	50V
C654		1-107-636-11	ELECT	10µF	20%	160V
C655	⚠	1-136-311-11	MYLAR	0.47µF	20%	125V
C657		1-104-664-11	ELECT	47µF	20%	25V
C658		1-135-572-51	ELECT (KV-27FV16/29FV16/29FV16C ONLY)	1000µF	20%	50V
C658		1-135-412-51	ELECT (KV-32FS12/32FS16 ONLY)	1000µF	20%	25V
C659		1-135-573-51	ELECT	15000µF	20%	25V
C660	⚠	1-128-714-11	ELECT (KV-29FV16/29FV16C ONLY)	330µF	20%	400V
C661	⚠	1-128-714-11	ELECT (KV-29FV16/29FV16C ONLY)	330µF	20%	400V
C699		1-117-703-11	CERAMIC (ALL EXCEPT KV-29FV16/29FV16C)	0.0047µF	20%	250V
C2001		1-104-664-11	ELECT	47µF	20%	25V

CONNECTOR

CN301	*	1-564-507-11	PLUG, CONNECTOR 4P
CN406	*	1-564-507-11	PLUG, CONNECTOR 4P
CN460		1-573-298-21	CONNECTOR, BOARD TO BOARD 20P
CN501	*	1-580-798-11	CONNECTOR PIN (DY) 6P
CN502	*	1-564-509-11	PLUG, CONNECTOR 6P
CN503	*	1-564-512-11	PLUG, CONNECTOR 9P (KV-27FV16/29FV16/29FV16C ONLY)
CN504	*	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P
CN506	*	1-564-508-11	PLUG, CONNECTOR 5P
CN515	*	1-564-510-11	PLUG, CONNECTOR 7P
CN602	*	1-580-843-11	PIN, CONNECTOR (POWER)
CN603	*	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P
CN604	*	1-573-963-11	PIN, CONNECTOR (PC BOARD) 3P (KV-32FS12/32FS16 ONLY)
CN2001	*	1-764-334-11	PLUG, CONNECTOR 11P (KV-27FV16/29FV16/29FV16C ONLY)
CN2001	*	1-564-511-11	PLUG, CONNECTOR 8P (KV-32FS12/32FS16 ONLY)
CN2003	*	1-564-506-11	PLUG, CONNECTOR 3P
CN2004	*	1-564-508-11	PLUG, CONNECTOR 5P (KV-27FV16/29FV16/29FV16C ONLY)
CN2005	*	1-764-333-11	PLUG, CONNECTOR 10P
CN2006	*	1-764-333-11	PLUG, CONNECTOR 10P
CN2007	*	1-564-512-11	PLUG, CONNECTOR 9P
CN2008	*	1-564-512-11	PLUG, CONNECTOR 9P

DIODE

REF.NO.		PART NO.	DESCRIPTION	REMARK		
D201		8-719-108-12	DIODE RD9.1EW-T1 (KV-27FV16/29FV16/29FV16C ONLY)			
D202		8-719-108-12	DIODE RD9.1EW-T1 (KV-27FV16/29FV16/29FV16C ONLY)			
D203		8-719-108-12	DIODE RD9.1EW-T1 (KV-27FV16/29FV16/29FV16C ONLY)			
D204		8-719-982-22	DIODE MTZJ-T-77-30D			
D205		8-719-108-12	DIODE RD9.1EW-T1			
D206		8-719-108-12	DIODE RD9.1EW-T1			
D208		8-719-110-17	DIODE MTZJ-T-77-10B			
D209		8-719-977-22	DIODE UDZ-TE-17-9.1B			
D210		8-719-110-17	DIODE MTZJ-T-77-10B			
D211		8-719-108-12	DIODE RD9.1EW-T1			
D212		8-719-110-17	DIODE MTZJ-T-77-10B (KV-32FS12/32FS16 ONLY)			
D213		8-719-110-17	DIODE MTZJ-T-77-10B (KV-32FS12/32FS16 ONLY)			
D214		8-719-108-12	DIODE RD9.1EW-T1			
D215		8-719-108-12	DIODE RD9.1EW-T1			
D216		1-216-025-91	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	100	5%	1/10W
D230		8-719-108-12	DIODE RD9.1EW-T1			
D231		8-719-108-12	DIODE RD9.1EW-T1			
D232		8-719-108-12	DIODE RD9.1EW-T1			
D233		8-719-108-12	DIODE RD9.1EW-T1			
D234		8-719-977-22	DIODE UDZ-TE-17-9.1B (KV-27FV16/29FV16/29FV16C ONLY)			
D235		8-719-977-22	DIODE UDZ-TE-17-9.1B (KV-27FV16/29FV16/29FV16C ONLY)			
D236		8-719-977-22	DIODE UDZ-TE-17-9.1B (KV-27FV16/29FV16/29FV16C ONLY)			
D401		8-719-110-17	DIODE MTZJ-T-77-10B			
D501		8-719-945-80	DIODE ERC06-15S			
D502		8-719-908-03	DIODE GP08DPKG23			
D503		8-719-908-03	DIODE GP08DPKG23			
D504		8-719-945-80	DIODE ERC06-15S			
D505		8-719-312-10	DIODE RU4AM-T3			
D506		8-719-302-43	DIODE RGP10GPKG3			
D507		8-719-991-33	DIODE 1SS133T-77			
D508		8-719-991-33	DIODE 1SS133T-77			
D509		8-719-109-89	DIODE MTZJ-T-77-5.6C			
D510		8-719-908-03	DIODE GP08DPKG23			
D511		8-719-302-43	DIODE RGP10GPKG23			
D512		8-719-073-01	DIODE MA111-TX			
D513		8-719-979-85	DIODE RGP15GPKG23			
D514		8-719-979-85	DIODE RGP15GPKG23			
D515		8-719-073-01	DIODE MA111-TX			
D516	⚠	8-719-991-33	DIODE 1SS133T-77			
D517	⚠	8-719-991-33	DIODE 1SS133T-77			
D518	⚠	8-719-921-63	DIODE MTZJ-T-77-7.5X			
D519	⚠	8-719-302-43	DIODE EL1Z-V1			
D520	⚠	8-719-073-01	DIODE MA111-TX			
D521		8-719-991-33	DIODE 1SS133T-77			
D522		8-719-991-33	DIODE 1SS133T-77			

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REF.NO.		PART NO.	DESCRIPTION	REMARK
D601		8-719-991-33	DIODE 1SS133T-77	
D602		8-719-991-33	DIODE 1SS133T-77	
D603		8-719-982-26	DIODE MTZJ-T-77-33B	
D604		8-719-028-72	DIODE RGP02-17PKG23	
D605	⚠	8-719-510-53	DIODE D4SB60L-F	
D606	⚠	8-719-108-18	DIODE TF541M	
D607		8-719-991-33	DIODE 1SS133T-77	
D608		8-719-110-53	DIODE MTZJ-T-77-20B	
D609		8-719-311-31	DIODE RU-1P (KV-29FV16/29FV16C ONLY)	
D610		8-719-510-02	DIODE D1NS4-TA	
D611		8-719-063-70	DIODE D1NL20U-TA	
D612		8-719-110-17	DIODE MTZJ-T-77-10B	
D613		8-719-063-70	DIODE D1NL20U-TA	
D614		8-719-063-70	DIODE D1NL20U-TA	
D615		8-719-312-10	DIODE RU4AM-T3	
D616		8-719-510-37	DIODE D5LC20U	
D617		8-719-110-31	DIODE MTZJ-T-77-12C	
D618		8-719-991-33	DIODE 1SS133T-77	
D619		8-719-110-17	DIODE MTZJ-T-77-10B	
D620		8-719-510-37	DIODE D5LC20U	
D622		8-719-077-76	DIODE D2SB60A-F04	
D623		8-719-948-45	DIODE ERA22-08TP3	
D624		8-719-991-33	DIODE 1SS133T-77	
D625		8-719-991-33	DIODE 1SS133T-77	
D626		8-719-063-70	DIODE D1NL20U-TA	
D627		8-719-110-03	DIODE MTZJ-T-77-7.5A	
D628		8-719-510-48	DIODE D1N20R-TA	
D2001		8-719-070-80	DIODE LNK0120022G (KV-32FS12/32FS16 ONLY)	
D2002		8-719-110-17	DIODE MTZJ-T-77-10B	
D2003		8-719-108-12	DIODE RD9.1EW-T1 (KV-32FS12/32FS16 ONLY)	
D2004		8-719-921-44	DIODE MTZJ-T-77-5.1C	
D2005		8-719-921-44	DIODE MTZJ-T-77-5.1C	

FUSE

F601	⚠	1-532-506-51	FUSE 6.3A/250V (KV-29FV16/29FV16C ONLY)	
F601	⚠	1-576-193-11	FUSE 6.3A/125V (ALL EXCEPT KV-29FV16/29FV16C)	

FERRITE BEAD

FB501		1-410-397-21	FERRITE	1.1µH
FB502		1-410-397-21	FERRITE	1.1µH
FB503		1-410-397-21	FERRITE	1.1µH
FB600		1-412-911-11	FERRITE	0µH
FB601		1-412-911-11	FERRITE	0µH
FB602		1-412-911-11	FERRITE	0µH
FB603		1-412-911-11	FERRITE	0µH
FB604		1-412-911-11	FERRITE	0µH
FB605		1-412-911-11	FERRITE	0µH
FB606		1-412-911-11	FERRITE	0µH
FB609		1-412-911-11	FERRITE	0µH
FB610		1-412-911-11	FERRITE	0µH

IC

IC401		8-759-490-17	IC TDA7057AQ/N2 (KV-32FS12/32FS16 ONLY)	
IC402		8-759-573-40	IC TDA8580Q/N1 (KV-27FV16/29FV16/29FV16C ONLY)	
IC501	⚠	8-759-700-07	IC NJM2903M-TE2	
IC502		8-759-980-58	IC TDA8172 (KV-27FV16/29FV16/29FV16C ONLY)	
IC502		8-759-192-71	IC STV9379 (KV-32FS12/32FS16 ONLY)	
IC601	⚠	8-749-014-48	IC STR-F6656 (KV-29FV16\29FV16C ONLY)	
IC601	⚠	8-749-015-61	IC STR-F6626 (ALL EXCEPT KV-29FV16/29FV16C)	
IC602	⚠	8-749-016-47	IC EA135-F12	
IC603		8-759-198-03	IC PQ09RF21	
IC604		8-759-701-75	IC NJM7805FA	
IC2001		8-742-212-20	HYB IC SBX3081-71 (KV-32FS12/32FS16 ONLY)	

JACK

J201		1-794-119-11	TERMINAL BLOCK, S 4P	
J202		1-794-267-11	JACK, PIN 3P (KV-32FS12/32FS16 ONLY)	
J203		1-794-118-11	JACK BLOCK, PIN 3P	
J204		1-794-118-11	JACK BLOCK, PIN 3P (KV-27FV16/29FV16/29FV16C ONLY)	
J205		1-794-116-11	JACK BLOCK, PIN 2P	
J206		1-794-117-11	JACK BLOCK, PIN 3P	
J402		1-794-116-11	JACK BLOCK, PIN 2P	

CHIP CONDUCTOR

JR001		1-216-295-91	SHORT	
JR002		1-216-295-91	SHORT	
JR402		1-216-295-91	SHORT	
JR403		1-216-295-91	SHORT	
JR405		1-216-295-91	SHORT (KV-27FV16/29FV16/29FV16C ONLY)	
JR411		1-216-295-91	SHORT	
JR471		1-216-295-91	SHORT (KV-27FV16/29FV16/29FV16C ONLY)	
JR502		1-216-295-91	SHORT	
JR503		1-216-295-91	SHORT	

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REF.NO.	PART NO.	DESCRIPTION	REMARK
JR505	1-216-295-91	SHORT	
JR522	1-216-295-91	SHORT	
JR523	1-216-295-91	SHORT	
JR526	1-216-295-91	SHORT	
JR527	1-216-295-91	SHORT	

COIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
L101	1-412-029-11	INDUCTOR CHIP	10µH
L102	1-412-032-11	INDUCTOR CHIP	100µH
L103	1-412-029-11	INDUCTOR CHIP	10µH
L503	1-406-677-11	INDUCTOR	10mH
L506	1-406-677-11	INDUCTOR	10mH
L604	1-412-525-31	INDUCTOR	10µH
L505	1-406-978-11	INDUCTOR (KV-27FV16/29FV16/29FV16C ONLY)	150µH
L505	1-406-976-11	INDUCTOR (KV-32FS12/32FS16 ONLY)	68µH
L510 ⚠	1-412-528-11	INDUCTOR	18µH
L502	1-412-552-11	INDUCTOR	2.2mH
L507	1-412-552-11	INDUCTOR	2.2mH
L603	1-412-529-11	INDUCTOR	22µH
L605	1-412-529-11	INDUCTOR	22µH
L504	1-412-533-21	INDUCTOR	47µH
L501	1-409-955-11	INDUCTOR	8mH

PHOTO COUPLER

REF.NO.	PART NO.	DESCRIPTION	REMARK
PH601 ⚠	8-749-010-64	PHOTO COUPLER PC123FY2	

IC LINK

REF.NO.	PART NO.	DESCRIPTION	REMARK
PS401 ⚠	1-532-686-21	LINK, IC 2.7A/150V (KV-27FV16/29FV16/29FV16C ONLY)	
PS401 ⚠	1-576-336-21	LINK, IC (KV-32FS12/32FS16 ONLY)	

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q101	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q201	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q205	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q206	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q401	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q402	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q410	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q411	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q501	8-729-140-50	TRANSISTOR 2SC3209LK-TP	
Q502 ⚠	8-729-046-07	TRANSISTOR 2SD2578-YB (KV-27FV16/29FV16/29FV16C ONLY)	
Q502 ⚠	8-729-045-26	TRANSISTOR 2SD2580-YB (KV-32FS12/32FS16 ONLY)	
Q503	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q504	8-729-809-29	TRANSISTOR 2SC4159-E	
Q505 ⚠	8-729-200-17	TRANSISTOR 2SA1091O-TPE2	
Q506 ⚠	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q507 ⚠	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q601	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW	
Q602	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA	
Q603	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA	
Q604	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q605 ⚠	8-729-046-40	TRANSISTOR 2SK2663	
Q606	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q607	8-729-922-37	TRANSISTOR 2SD2144S-TP-UVW	
Q608	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q609	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA	

RESISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R105	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R107	1-216-025-91	RES-CHIP	100	5%	1/10W
R108	1-216-025-91	RES-CHIP	100	5%	1/10W
R115	1-216-295-91	SHORT			
R201	1-216-113-00	RES-CHIP	470K	5%	1/10W
R202	1-216-113-00	RES-CHIP	470K	5%	1/10W
R204	1-216-081-00	RES-CHIP	22K	5%	1/10W
R205	1-216-085-00	RES-CHIP	33K	5%	1/10W
R208	1-215-924-00	METAL OXIDE	15K	5%	3W
R214	1-216-113-00	RES-CHIP	470K	5%	1/10W
R215	1-216-113-00	RES-CHIP	470K	5%	1/10W
R218	1-216-025-91	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	100	5%	1/10W
R221	1-216-033-00	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	220	5%	1/10W
R224	1-216-065-91	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	4.7K	5%	1/10W
R225	1-216-065-91	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	4.7K	5%	1/10W
R226	1-216-022-00	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	75	5%	1/10W
R227	1-216-113-00	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	470K	5%	1/10W
R228	1-216-113-00	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	470K	5%	1/10W
R229	1-216-113-00	RES-CHIP (KV-27FV16/29FV16/29FV16C ONLY)	470K	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R231	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R232	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R235	1-216-113-00	RES-CHIP	470K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R237	1-216-033-00	RES-CHIP	220	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R238	1-216-033-00	RES-CHIP	220	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R239	1-216-113-00	RES-CHIP	470K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R401	1-216-080-00	RES-CHIP	20K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R402	1-216-073-00	RES-CHIP	10K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R403	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R404	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R407	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R408	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R411	1-249-417-11	CARBON	1K	5%	1/4W
R412	1-216-113-00	RES-CHIP	470K	5%	1/10W
R413	1-216-113-00	RES-CHIP	470K	5%	1/10W
R414	1-249-417-11	CARBON	1K	5%	1/4W
R421	1-249-425-11	CARBON	4.7K	5%	1/4W
R420	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R422	1-249-389-11	CARBON	4.7	5%	1/4W
R426	1-216-009-91	RES-CHIP	22	5%	1/10W
R429	1-216-113-00	RES-CHIP	470K	5%	1/10W
R430	1-216-049-91	RES-CHIP	1K	5%	1/10W
R431	1-216-049-91	RES-CHIP	1K	5%	1/10W
R433	1-216-113-00	RES-CHIP	470K	5%	1/10W
R436	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R437	1-216-073-00	RES-CHIP	10K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R437	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R438	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R439	1-216-073-00	RES-CHIP	10K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R439	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R440	1-216-097-91	RES-CHIP	100K	5%	1/10W
R441	1-216-081-00	RES-CHIP	22K	5%	1/10W
R442	1-216-025-91	RES-CHIP	100	5%	1/10W
R445	1-216-073-00	RES-CHIP	10K	5%	1/10W
R446	1-215-457-00	METAL	33K	1%	1/4W

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R447	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R454	1-216-025-91	RES-CHIP	100	5%	1/10W
R501	1-249-425-11	CARBON	4.7K	5%	1/4W
R502 ⚠	1-216-455-21	METAL OXIDE	560	5%	2W
R503 ⚠	1-249-425-11	CARBON	4.7K	5%	1/4W
R505	1-249-401-11	CARBON	47	5%	1/4W
R506 ⚠	1-215-883-11	METAL OXIDE	33	5%	2W
R507 ⚠	1-260-328-11	CARBON	1K	5%	1/2W
R508	1-247-863-91	CARBON	22K	5%	1/4W
R509 ⚠	1-215-891-11	METAL OXIDE	680	5%	2W
R510	1-249-411-11	CARBON	330	5%	1/4W
R511	1-249-377-11	CARBON	0.47	5%	1/4W
R512	1-215-910-00	METAL OXIDE	68	5%	3W
R513 ⚠	1-215-907-11	METAL OXIDE	22	5%	3W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R513 ⚠	1-215-905-11	METAL OXIDE	10	5%	3W
		(KV-32FS12/32FS16 ONLY)			
R514	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R514	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R516	1-249-425-11	CARBON	4.7K	5%	1/4W
R517	1-215-445-00	METAL	10K	1%	1/4W
R518	1-249-427-11	CARBON	6.8K	5%	1/4W
		(KV-27FV16 ONLY)			
R518	1-215-439-00	METAL	5.6K	1%	1/4W
		(ALL EXCEPT KV-27FV16)			
R519	1-249-427-11	CARBON	6.8K	5%	1/4W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R519	1-215-439-00	METAL	5.6K	1%	1/4W
		(KV-32FS12/32FS16 ONLY)			
R520 ⚠	1-215-884-11	METAL OXIDE	47	5%	2W
R521	1-249-413-11	CARBON	470	5%	1/4W
R522	1-249-417-11	CARBON	1K	5%	1/4W
R523	1-216-073-00	RES-CHIP	10K	5%	1/10W
R524	1-249-429-11	CARBON	10K	5%	1/4W
R525 ⚠	1-208-804-11	METAL CHIP	8.2K	0.50%	1/10W
R526	1-208-814-91	METAL CHIP	22K	0.50%	1/10W
R528	1-215-429-00	METAL	2.2K	1%	1/4W
R529	1-216-109-00	RES-CHIP	330K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R529	1-216-107-00	RES-CHIP	270K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R530	1-216-077-91	RES-CHIP	15K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R530	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R532	1-215-437-00	METAL	4.7K	1%	1/4W
R533	1-215-457-00	METAL	33K	1%	1/4W
		(KV-27FV16/29FV16/29FV16C ONLY)			

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding x-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.		PART NO.	DESCRIPTION		REMARK	
R533		1-215-453-00	METAL	22K	1%	1/4W
			(KV-32FS12/32FS16 ONLY)			
R534		1-215-458-00	METAL	36K	1%	1/4W
			(KV-27FV16/29FV16/29FV16C ONLY)			
R534		1-215-457-00	METAL	33K	1%	1/4W
			(KV-32FS12/32FS16 ONLY)			
R535		1-249-441-11	CARBON	100K	5%	1/4W
R536	⚠	1-214-798-21	METAL	1.8	1%	1/2W
R537		1-249-401-11	CARBON	47	5%	1/4W
R538	⚠	1-215-889-00	METAL OXIDE	330	5%	2W
R539		1-249-385-11	CARBON	2.2	5%	1/4W
R540		1-215-445-00	METAL	10K	1%	1/4W
R541		1-249-429-11	CARBON	10K	5%	1/4W
R543		1-247-887-00	CARBON	220K	5%	1/4W
R544		1-249-377-11	CARBON	0.47	5%	1/4W
R545		1-215-873-00	METAL OXIDE	4.7K	5%	1W
R546	⚠	1-249-377-11	CARBON	0.47	5%	1/4W
R547		1-216-455-21	METAL OXIDE	560	5%	2W
R548		1-216-377-11	METAL OXIDE	4.7	5%	2W
R549	⚠	1-260-288-11	CARBON	0.47	5%	1/2W
R550	⚠	1-260-288-11	CARBON	0.47	5%	1/2W
R551		1-215-907-11	METAL OXIDE	22	5%	3W
R553	⚠	1-216-363-00	METAL OXIDE	0.33	5%	2W
R554	⚠	1-249-429-11	CARBON	10K	5%	1/4W
R555	⚠	1-247-895-91	CARBON	470K	5%	1/4W
R556	⚠	1-249-417-11	CARBON	1K	5%	1/4W
R557	⚠	1-247-895-91	CARBON	470K	5%	1/4W
R558	⚠	1-216-097-91	RES-CHIP	100K	5%	1/10W
R559	⚠	1-216-073-00	RES-CHIP	10K	5%	1/10W
R560	⚠	1-215-902-11	METAL OXIDE	47K	5%	1W
R561	⚠	1-249-406-11	CARBON	120	5%	1/4W
R562	⚠	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R563	⚠	1-247-863-91	CARBON	22K	5%	1/4W
⧓R564	⚠	1-208-836-11	METAL CHIP	180K	0.50%	1/10W
			(KV-27FV16/29FV16/29FV16C ONLY)			
⧓R564	⚠	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
			(KV-32FS12/32FS16 ONLY)			
R565	⚠	1-249-429-11	CARBON	10K	5%	1/4W
R566	⚠	1-216-073-00	RES-CHIP	10K	5%	1/10W
R567	⚠	1-216-073-00	RES-CHIP	10K	5%	1/10W
R568	⚠	1-215-882-00	METAL OXIDE	22	5%	2W
R569		1-214-798-21	METAL	1.8	1%	1/2W
R570		1-247-863-91	CARBON	22K	5%	1/4W
R571		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R572		1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R601	⚠	1-219-513-11	CARBON	4.7M	5%	1/2W
			(ALL EXCEPT KV-29FV16/29FV16C)			
R602	⚠	1-249-389-11	CARBON	4.7	5%	1/4W
R603		1-215-485-00	METAL	470K	1%	1/4W
R607		1-215-859-00	METAL OXIDE	22	5%	1W

REF.NO.		PART NO.	DESCRIPTION		REMARK	
R608		1-240-205-11	CARBON	22M	5%	1/2W
R609		1-216-049-91	RES-CHIP	1K	5%	1/10W
R610		1-216-073-00	RES-CHIP	10K	5%	1/10W
R611		1-216-089-91	RES-CHIP	47K	5%	1/10W
R612		1-216-045-00	RES-CHIP	680	5%	1/10W
R613	⚠	1-219-512-11	CARBON	2.2M	5%	1/2W
R614		1-249-413-11	CARBON	470	5%	1/4W
R615	⚠	1-218-265-11	METAL	8.2M	5%	1W
			(KV-29FV16/29FV16C ONLY)			
R616	⚠	1-260-302-51	CARBON	6.8	5%	1/2W
R617		1-216-009-91	RES-CHIP	22	5%	1/10W
R618		1-249-440-11	CARBON	82K	5%	1/4W
R619		1-249-437-11	CARBON	47K	5%	1/4W
R620		1-249-417-11	CARBON	1K	5%	1/4W
R621	⚠	1-240-251-11	CEMENTED	6.8	5%	10W
R622		1-249-441-11	CARBON	100K	5%	1/4W
R623	⚠	1-260-324-11	CARBON	470	5%	1/2W
R624	⚠	1-249-429-11	CARBON	10K	5%	1/4W
R625		1-249-437-11	CARBON	47K	5%	1/4W
R626	⚠	1-220-926-11	FUSIBLE	0.47	10%	1/2W
R627		1-215-479-00	METAL	270K	1%	1/4W
			(KV-29FV16/29FV16C ONLY)			
R627		1-215-483-00	METAL	390K	1%	1/4W
			(ALL EXCEPT KV-29FV16/29FV16C)			
R628		1-215-479-00	METAL	270K	1%	1/4W
			(ALL EXCEPT KV-27FV16)			
R630		1-249-421-11	CARBON	2.2K	5%	1/4W
R631		1-215-929-11	METAL OXIDE	100K	5%	3W
			(KV-29FV16/29FV16C ONLY)			
R632	⚠	1-217-611-00	METAL	0.1	10%	2W
R633		1-249-415-11	CARBON	680	5%	1/4W
R634		1-216-073-00	RES-CHIP	10K	5%	1/10W
R635		1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R637	⚠	1-216-485-11	METAL OXIDE	5.6K	5%	3W
			(KV-29FV16/29FV16C ONLY)			
R638		1-249-402-11	CARBON	56	5%	1/4W
			(KV-29FV16/29FV16C ONLY)			
R638		1-249-399-11	CARBON	33	5%	1/4W
			(ALL EXCEPT KV-29FV16/29FV16C)			
R639		1-249-421-11	CARBON	2.2K	5%	1/4W
R640		1-249-417-11	CARBON	1K	5%	1/4W
R641	⚠	1-216-369-00	METAL OXIDE	1	5%	2W
R642		1-216-089-91	RES-CHIP	47K	5%	1/10W
R643		1-249-419-11	CARBON	1.5K	5%	1/4W
R644		1-247-843-11	CARBON	3.3K	5%	1/4W
R645		1-215-898-11	METAL OXIDE	10K	5%	2W
R646		1-249-418-11	CARBON	1.2K	5%	1/4W
			(KV-29FV16/29FV16C ONLY)			
R646		1-249-419-11	CARBON	1.5K	5%	1/4W
			(ALL EXCEPT KV-29FV16/29FV16C)			

Note:

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Note:

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REF.NO.		PART NO.	DESCRIPTION		REMARK	
R648		1-216-397-11	METAL OXIDE	4.7	5%	3W
			(KV-27FV16/29FV16/29FV16C ONLY)			
R648		1-215-908-00	METAL OXIDE	33	5%	3W
			(KV-32FS12/32FS16 ONLY)			
R649		1-249-417-11	CARBON	1K	5%	1/4W
R650		1-216-387-11	METAL OXIDE	0.68	5%	3W
R651		1-249-429-11	CARBON	10K	5%	1/4W
R653		1-216-049-91	RES-CHIP	1K	5%	1/10W
R655		1-216-049-91	RES-CHIP	1K	5%	1/10W
R656		1-249-429-11	CARBON	10K	5%	1/4W
R658		1-216-387-11	METAL OXIDE	0.68	5%	3W
R659		1-215-857-11	METAL OXIDE	10	5%	1W
R660	⚠	1-216-485-11	METAL OXIDE	5.6K	5%	3W
			(KV-29FV16/29FV16C ONLY)			
R660	⚠	1-215-924-00	METAL OXIDE	15K	5%	3W
			(ALL EXCEPT KV-29FV16/29FV16C)			
R661		1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R662	⚠	1-216-485-11	METAL OXIDE	5.6K	5%	3W
			(KV-29FV16/29FV16C ONLY)			
R663		1-216-081-00	RES-CHIP	22K	5%	1/10W
R664		1-216-397-11	METAL OXIDE	4.7	5%	3W
			(KV-27FV16/29FV16/29FV16C ONLY)			
R2001		1-216-057-00	RES-CHIP	2.2K	5%	1/10W
			(KV-32FS12/32FS16 ONLY)			
R2002		1-216-053-00	RES-CHIP	1.5K	5%	1/10W
			(KV-32FS12/32FS16 ONLY)			
R2003		1-249-425-11	CARBON	4.7K	5%	1/4W
R2004		1-216-069-00	RES-CHIP	6.8K	5%	1/10W
			(KV-32FS12/32FS16 ONLY)			
R2005		1-216-295-91	SHORT			
			(KV-32FS12/32FS16 ONLY)			

RELAY

RY601	⚠	1-755-198-11	RELAY
RY602	⚠	1-755-266-11	RELAY, AC POWER

SWITCH

S2007	1-762-816-11	SWITCH, TACTILE
		(KV-32FS12/32FS16 ONLY)
S2008	1-762-816-11	SWITCH, TACTILE
		(KV-32FS12/32FS16 ONLY)

SWITCH

SW501	1-572-707-11	SWITCH, LEVER
SW502	1-572-707-11	SWITCH, LEVER

TRANSFORMER

REF.NO.		PART NO.	DESCRIPTION	REMARK
T501	⚠	1-437-195-11	TRANSFORMER, HORIZONTAL DRIVE	
T503	⚠	1-426-981-11	TRANSFORMER, FERRITE (PMT)	
T504	⚠	1-431-693-11	TRANSFORMER, HORIZONTAL LINEAR	
			(KV-27FV16/29FV16/29FV16C ONLY)	
T504	⚠	1-435-098-11	TRANSFORMER, HORIZONTAL LINEAR	
			(KV-32FS12/32FS16 ONLY)	
T505	⚠	1-453-310-11	FBT ASSY NX-4521//X4J4	
			(KV-27FV16/29FV16/29FV16C ONLY)	
T505	⚠	1-453-338-11	FBT ASSY, NX-4600//X4J4	
			(KV-32FS12/32FS16 ONLY)	
T602	⚠	1-426-717-11	TRANSFORMER, LINE FILTER (LFT)	
			(KV-29FV16/29FV16C ONLY)	
T602	⚠	1-435-617-11	TRANSFORMER, LINE FILTER	
			(ALL EXCEPT KV-29FV16/29FV16C)	
T603	⚠	1-435-402-11	TRANSFORMER, CONVERTER (SRT)	
			(KV-29FV16/29FV16C ONLY)	
T603	⚠	1-435-403-11	TRANSFORMER, CONVERTER (S.R.T)	
			(ALL EXCEPT KV-29FV16/29FV16C)	
T604	⚠	1-431-852-11	TRANSFORMER, CONVERTER (SRT)	

THERMISTOR

TH501		1-800-193-00	THERMISTOR
TH601	⚠	1-803-586-11	THERMISTOR, NTC

THERMISTOR

THP601	⚠	1-803-540-11	THERMISTOR

TUNER

TU101	⚠	8-598-431-30	TUNER, FSS BTF-WA411

VARISTOR

VDR601	⚠	1-803-967-11	VARISTOR (ENE621D-14A)
			(KV-29FV16/29FV16C ONLY)
VDR601	⚠	1-803-585-11	VARISTOR ENE271D-10A
			(ALL EXCEPT KV-29FV16/29FV16C)

BC

*	A-1131-593-A	BC MOUNTED PC BOARD
		(ALL EXCEPT KV-32FS12/32FS16)

CAPACITOR

C3500	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3501	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C3502	1-165-319-11	CERAMIC CHIP	0.1µF		50V

BC

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Note:

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REF.NO.	PART NO.	DESCRIPTION	REMARK		
C3504	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C3505	1-163-102-00	CERAMIC CHIP	24PF	5%	50V
C3506	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3507	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3509	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C3510	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C3511	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C3512	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3513	1-216-295-91	SHORT			
C3514	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3515	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3516	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3517	1-126-924-11	ELECT	330µF	20%	6.3V
C3518	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C3519	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3520	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3521	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C3522	1-104-664-11	ELECT	47µF	20%	16V
C3523	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3524	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3525	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C3526	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3527	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3528	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3529	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3530	1-104-664-11	ELECT	47µF	20%	16V
C3531	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3532	1-126-964-11	ELECT	10µF	20%	50V
C3533	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C3534	1-126-960-11	ELECT	1µF	20%	50V
C3535	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C3536	1-126-960-11	ELECT	1µF	20%	50V
C3539	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C3541	1-163-106-00	CERAMIC CHIP	36PF	5%	50V
C3542	1-126-964-11	ELECT	10µF	20%	50V
C3543	1-164-505-11	CERAMIC CHIP	2.2µF		16V
C3546	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C3547	1-104-664-11	ELECT	47µF	20%	16V
C3548	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3549	1-104-664-11	ELECT	47µF	20%	16V
C3550	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3551	1-104-664-11	ELECT	47µF	20%	16V
C3552	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3553	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3554	1-104-664-11	ELECT	47µF	20%	16V
C3555	1-104-664-11	ELECT	47µF	20%	16V
C3556	1-165-319-11	CERAMIC CHIP	0.1µF		50V
C3557	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3558	1-104-664-11	ELECT	47µF	20%	16V
C3559	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3560	1-104-664-11	ELECT	47µF	20%	16V
C3561	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3562	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3563	1-104-664-11	ELECT	47µF	20%	16V
C3564	1-104-664-11	ELECT	47µF	20%	16V
C3565	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3566	1-163-031-11	CERAMIC CHIP	0.01µF		50V

CONNECTOR

CN3500*	1-691-632-21	CONNECTOR, BOARD TO BOARD 15P	

FERRITE BEAD

FB3500	1-414-234-22	INDUCTOR CHIP	0µH
FB3501	1-414-234-22	INDUCTOR CHIP	0µH
FB3502	1-414-234-22	INDUCTOR CHIP	0µH
FB3503	1-414-234-22	INDUCTOR CHIP	0µH
FB3504	1-414-234-22	INDUCTOR CHIP	0µH
FB3505	1-414-234-22	INDUCTOR CHIP	0µH
FB3506	1-414-234-22	INDUCTOR CHIP	0µH
FB3507	1-414-234-22	INDUCTOR CHIP	0µH
FB3508	1-414-234-22	INDUCTOR CHIP	0µH

FILTER

FL3500	1-239-848-21	FILTER, LOW PASS	
FL3502	1-239-848-21	FILTER, LOW PASS	
FL3503	1-239-848-21	FILTER, LOW PASS	
FL3504	1-233-512-21	FERRITE	37µH
FL3505	1-233-512-21	FERRITE	37µH
FL3506	1-233-512-21	FERRITE	37µH

IC

IC3500	8-759-568-27	IC UPD424210LE-60-E2
IC3501	8-759-594-44	IC UPD64082GF-3BA
IC3502	8-759-583-47	IC UPC2933T-E1

COIL

L3500	1-412-028-11	INDUCTOR CHIP	4.7µH
L3501	1-414-267-11	INDUCTOR	10µH
L3502	1-414-267-11	INDUCTOR	10µH
L3503	1-414-267-11	INDUCTOR	10µH
L3504	1-414-267-11	INDUCTOR	10µH
L3505	1-414-267-11	INDUCTOR	10µH

Note:

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Note:

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TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION		REMARK	
Q3500	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
Q3501	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3502	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
Q3503	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3504	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
Q3505	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3506	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3510	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
Q3511	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3512	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3513	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3514	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX			
Q3515	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3516	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			
Q3517	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX			

RESISTOR

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R3500	1-216-296-91	SHORT			
R3501	1-216-296-91	SHORT			
R3502	1-216-296-91	SHORT			
R3503	1-216-017-91	RES-CHIP	47	5%	1/10W
R3504	1-216-295-91	SHORT			
R3505	1-216-295-91	SHORT			
R3506	1-216-295-91	SHORT			
R3507	1-216-295-91	SHORT			
R3508	1-216-295-91	SHORT			
R3509	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3510	1-216-041-00	RES-CHIP	470	5%	1/10W
R3511	1-216-041-00	RES-CHIP	470	5%	1/10W
R3512	1-216-295-91	SHORT			
R3514	1-216-025-91	RES-CHIP	100	5%	1/10W
R3515	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R3516	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R3517	1-216-025-91	RES-CHIP	100	5%	1/10W
R3518	1-216-025-91	RES-CHIP	100	5%	1/10W
R3519	1-216-295-91	SHORT			
R3520	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R3521	1-216-041-00	RES-CHIP	470	5%	1/10W
R3522	1-216-041-00	RES-CHIP	470	5%	1/10W
R3523	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3524	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3525	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3526	1-216-105-91	RES-CHIP	220K	5%	1/10W
R3527	1-216-033-00	RES-CHIP	220	5%	1/10W
R3528	1-216-645-11	METAL CHIP	560	0.50%	1/10W
R3529	1-216-641-11	METAL CHIP	390	0.50%	1/10W
R3530	1-216-067-00	RES-CHIP	5.6K	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R3531	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3532	1-216-025-91	RES-CHIP	100	5%	1/10W
R3534	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3535	1-216-025-91	RES-CHIP	100	5%	1/10W
R3544	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3545	1-216-043-91	RES-CHIP	560	5%	1/10W
R3547	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R3548	1-216-295-91	SHORT			
R3549	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3550	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R3551	1-208-776-11	METAL CHIP	560	0.50%	1/10W
R3552	1-208-764-11	METAL CHIP	180	0.50%	1/10W
R3553	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3554	1-216-047-91	RES-CHIP	820	5%	1/10W
R3555	1-216-075-00	RES-CHIP	12K	5%	1/10W
R3556	1-216-085-00	RES-CHIP	33K	5%	1/10W
R3557	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3558	1-216-017-91	RES-CHIP	47	5%	1/10W
R3559	1-216-295-91	SHORT			
R3560	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3561	1-216-043-91	RES-CHIP	560	5%	1/10W
R3563	1-216-295-91	SHORT			
R3564	1-216-295-91	SHORT			
R3565	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R3566	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3567	1-216-043-91	RES-CHIP	560	5%	1/10W
R3568	1-216-047-91	RES-CHIP	820	5%	1/10W
R3569	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3570	1-216-085-00	RES-CHIP	33K	5%	1/10W
R3571	1-216-075-00	RES-CHIP	12K	5%	1/10W
R3572	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3573	1-216-017-91	RES-CHIP	47	5%	1/10W
R3588	1-216-043-91	RES-CHIP	560	5%	1/10W

CRYSTAL

REF.NO.	PART NO.	DESCRIPTION
X3500	1-767-606-11	VIBRATOR, CRYSTAL

CA D

Note:

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CA

REF.NO.	PART NO.	DESCRIPTION	REMARK		
*	A-1332-063-A	CA (VAR) MOUNTED PC BOARD (KV-27FV16/29FV16/29FV16C ONLY)			
*	A-1332-061-A	CA (VAR) MOUNTED PC BOARD (KV-32FS12/32FS16 ONLY)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			

CAPACITOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
C701	1-104-664-11	ELECT	47µF	20%	25V
C702	1-136-165-00	MYLAR	0.1µF	5%	50V
C703	1-104-664-11	ELECT	47µF	20%	25V
C704	1-107-651-11	ELECT	4.7µF	20%	250V
C705	1-107-652-11	ELECT	10µF	20%	250V
C707	1-162-114-00	CERAMIC	0.0047µF		2KV
C708	1-136-165-00	MYLAR	0.1µF	5%	50V
C709	1-126-934-11	ELECT	220µF	20%	16V
C710	1-126-964-11	ELECT	10µF	20%	50V

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION
CN701 *	1-564-506-11	PLUG, CONNECTOR 3P
CN702	1-695-915-11	TAB (CONTACT)
CN704	1-784-281-11	HOUSING, CONNECTOR 1P
CN706 *	1-564-509-11	PLUG, CONNECTOR 6P

DIODE

REF.NO.	PART NO.	DESCRIPTION
D701	8-719-901-83	DIODE 1SS83TD
D702	8-719-901-83	DIODE 1SS83TD
D703	8-719-901-83	DIODE 1SS83TD
D704	8-719-302-43	DIODE RGP10GPKG23

IC

REF.NO.	PART NO.	DESCRIPTION
IC701	8-759-803-42	IC LA6500-FA
IC702	8-759-562-43	IC TDA6108JF/N1B

JACK

REF.NO.	PART NO.	DESCRIPTION
J701	1-451-470-21	SOCKET, CRT

COIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
L701	1-408-613-31	INDUCTOR	68µH

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION
Q700	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA
Q701	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA

RESISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R706	1-249-381-11	CARBON	1	5%	1/4W
R707	1-249-383-11	CARBON	1.5	5%	1/4W
R703	1-247-807-31	CARBON	100	5%	1/4W
R708	1-247-807-31	CARBON	100	5%	1/4W
R709	1-247-807-31	CARBON	100	5%	1/4W
R710	1-247-807-31	CARBON	100	5%	1/4W
R714	1-260-087-11	CARBON	100	5%	1/2W
R702	1-247-815-91	CARBON	220	5%	1/4W
R716	1-260-123-11	CARBON	100K	5%	1/2W
R701	1-249-429-11	CARBON	10K	5%	1/4W
R705	1-249-429-11	CARBON	10K	5%	1/4W
R711	1-260-099-11	CARBON	1K	5%	1/2W
R712	1-260-099-11	CARBON	1K	5%	1/2W
R713	1-260-099-11	CARBON	1K	5%	1/2W
R704	1-249-421-11	CARBON	2.2K	5%	1/4W
R720	1-249-421-11	CARBON	2.2K	5%	1/4W
R721	1-249-421-11	CARBON	2.2K	5%	1/4W
R700	1-247-863-91	CARBON	22K	5%	1/4W
R715	1-260-132-11	CARBON	560K	5%	1/2W
R717	1-216-373-11	METAL OXIDE (KV-27FV16/29FV16/29FV16C ONLY)	2.2	5%	2W
R718	1-216-375-00	METAL OXIDE (KV-32FS12/32FS16 ONLY)	3.3	5%	2W
R719	1-215-888-00	METAL OXIDE	220	5%	2W

VARIABLE RESISTOR

REF.NO.	PART NO.	DESCRIPTION
RV701	1-241-656-11	RES, ADJ, METAL FILM 110M

D

REF.NO.	PART NO.	DESCRIPTION
*	A-1343-875-A	D (VAR) MOUNTED PC BOARD (KV-27FV16/29FV16/29FV16C ONLY)
*	A-1343-874-A	D (VAR) MOUNTED PC BOARD (KV-32FS12/32FS16 ONLY)

CAPACITOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
C801	1-126-960-11	ELECT	1µF	20%	50V
C802	1-126-964-11	ELECT	10µF	20%	50V
C803	1-136-191-11	MYLAR	0.22µF	5%	63V
C804	1-136-191-11	MYLAR	0.22µF	5%	63V

Note:

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
C807	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C808	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C809	1-110-501-11	CERAMIC CHIP	0.33µF	10%	16V
C810	1-130-495-00	MYLAR	0.1µF	5%	50V
C812	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C814	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C815	1-129-718-00	FILM	0.022µF	5%	630V
C816	1-102-244-00	CERAMIC	220PF	10%	500V
C817	1-136-558-11	FILM	0.0039µF	5%	630V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C817	1-129-928-00	FILM	0.0027µF	10%	630V
		(KV-32FS12/32FS16 ONLY)			
C818	1-164-735-51	CERAMIC	0.0015µF	10%	500V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C818	1-164-625-11	CERAMIC	680PF	10%	500V
		(KV-32FS12/32FS16 ONLY)			
C820	1-109-954-11	ELECT	0.47µF	20%	160V
C821	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C823	1-130-967-00	FILM	0.0027µF	5%	50V
C824	1-104-760-11	CERAMIC CHIP	0.047µF	10%	50V
C825	1-137-150-11	MYLAR	0.01µF	5%	50V
C826	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C862	1-126-964-11	ELECT	10µF	20%	50V

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION
CN800 *	1-564-510-11	PLUG, CONNECTOR 7P
CN801 *	1-564-507-11	PLUG, CONNECTOR 4P
CN802 *	1-508-784-21	PIN, CONNECTOR (5MM PITCH) 1P

DIODE

REF.NO.	PART NO.	DESCRIPTION
D801	8-719-109-89	DIODE MTZJ-T-77-5.6C
D802	8-719-991-33	DIODE 1SS133T-77
D808	8-719-991-33	DIODE 1SS133T-77
D809	8-719-110-41	DIODE MTZJ-T-77-15B
D810	8-719-970-87	DIODE ERA38-06TP1
D811	8-719-970-87	DIODE ERA38-06TP1
D812	8-719-300-33	DIODE ERB44-06TP1
D813	8-719-991-33	DIODE 1SS133T-77
D814	8-719-991-33	DIODE 1SS133T-77

IC

REF.NO.	PART NO.	DESCRIPTION
IC801	8-759-700-42	IC NJM2904D
IC802	8-759-659-67	IC NJM2903D
IC803	8-759-659-67	IC NJM2903D

COIL

REF.NO.	PART NO.	DESCRIPTION	
L803	1-406-677-11	INDUCTOR	10mH

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION
Q801	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q802	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q803	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q804	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q805	8-729-140-97	TRANSISTOR 2SB734-T-34
Q806	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q809	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q810	8-729-043-95	TRANSISTOR 2SC3840K
Q811	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA
Q812	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA

RESISTOR

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R801	1-216-089-91	RES-CHIP	47K	5%	1/10W
R802	1-216-073-00	RES-CHIP	10K	5%	1/10W
R803	1-216-081-00	RES-CHIP	22K	5%	1/10W
R804	1-216-073-00	RES-CHIP	10K	5%	1/10W
R805	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R806	1-216-081-00	RES-CHIP	22K	5%	1/10W
R807	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R808	1-216-073-00	RES-CHIP	10K	5%	1/10W
R809	1-216-081-00	RES-CHIP	22K	5%	1/10W
R811	1-216-025-91	RES-CHIP	100	5%	1/10W
R812	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R813	1-216-041-00	RES-CHIP	470	5%	1/10W
R814	1-215-862-11	METAL OXIDE	68	5%	1W
		(KV-32FS12/32FS16 ONLY)			
R815	1-215-862-11	METAL OXIDE	68	5%	1W
R816	1-247-807-31	CARBON	100	5%	1/4W
R817	1-216-091-00	RES-CHIP	56K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R817	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R819	1-216-089-91	RES-CHIP	47K	5%	1/10W
R820	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R820	1-208-818-11	METAL CHIP	33K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R821	1-216-077-91	RES-CHIP	15K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R821	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R822	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R823	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R824	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R825	1-208-830-11	METAL CHIP	100K	0.50%	1/10W
R827	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R828	1-216-085-00	RES-CHIP	33K	5%	1/10W
R829	1-208-846-11	METAL CHIP	470K	0.50%	1/10W
R830	1-216-295-91	SHORT			

D **HA**

Note:

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R831	1-216-049-91	RES-CHIP	1K	5%	1/10W
R832	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R832	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R833	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R833	1-216-689-11	RES-CHIP	39K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R834	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R835	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R836	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R837	1-208-808-11	METAL CHIP	12K	0.50%	1/10W
R838	1-247-807-31	CARBON	100	5%	1/4W
R839	1-216-025-91	RES-CHIP	100	5%	1/10W
R840	1-216-093-91	RES-CHIP	68K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R841	1-208-802-11	METAL CHIP	6.8K	0.50%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R841	1-208-806-11	METAL OXIDE	10K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R842	1-208-796-11	METAL CHIP	3.9K	0.50%	1/10W
R845	1-249-441-11	CARBON	100K	5%	1/4W
R846	1-249-441-11	CARBON	100K	5%	1/4W
R847	1-249-441-11	CARBON	100K	5%	1/4W
R848	1-215-876-00	METAL OXIDE	15K	5%	1W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R848	1-215-894-11	METAL OXIDE	2.2K	5%	2W
		(KV-32FS12/32FS16 ONLY)			
R849	1-215-920-11	METAL OXIDE	3.3K	5%	3W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R849	1-216-486-21	METAL OXIDE	8.2K	5%	3W
		(KV-32FS12/32FS16 ONLY)			
R850	1-216-486-21	METAL OXIDE	8.2K	5%	3W
		(KV-32FS12/32FS16 ONLY)			
R851	1-215-894-11	METAL OXIDE	2.2K	5%	2W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R851	1-215-922-11	METAL OXIDE	6.8K	5%	3W
		(KV-32FS12/32FS16 ONLY)			
R852	1-215-922-11	METAL OXIDE	6.8K	5%	3W
		(KV-32FS12/32FS16 ONLY)			
R854	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R854	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R855	1-216-089-91	RES-CHIP	47K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R855	1-216-091-00	RES-CHIP	56K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R857	1-208-818-11	METAL CHIP	33K	0.50%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R860	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R862	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R863	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R864	1-216-033-00	RES-CHIP	220	5%	1/10W
R865	1-216-097-91	RES-CHIP	100K	5%	1/10W
R866	1-249-429-11	CARBON	10K	5%	1/4W
R867	1-216-073-00	RES-CHIP	10K	5%	1/10W
R868	1-216-073-00	RES-CHIP	10K	5%	1/10W
R869	1-216-097-91	RES-CHIP	100K	5%	1/10W
R870	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R871	1-215-489-00	METAL	680K	1%	1/4W
R872	1-216-121-91	RES-CHIP	1M	5%	1/10W
R873	1-216-073-00	RES-CHIP	10K	5%	1/10W
R874	1-216-037-00	RES-CHIP	330	5%	1/10W
R875	1-216-035-00	RES-CHIP	270	5%	1/10W
R890	1-216-097-91	RES-CHIP	100K	5%	1/10W

TRANSFORMER

T801	1-424-584-11	TRANSFORMER, DYNAMIC FOCUS

HA

*	A-1372-825-A	HA MOUNTED PC BOARD (ALL EXCEPT KV-32FS12/32FS16)

CAPACITOR

C4202	1-117-534-91	ELECT	1μF	20%	100V
C4203	1-117-534-91	ELECT	1μF	20%	100V

CONNECTOR

CN4200*	1-564-512-11	PLUG, CONNECTOR 9P

DIODE

D4217	8-719-108-12	DIODE RD9.1EW-T1
D4218	8-719-108-12	DIODE RD9.1EW-T1
D4219	8-719-108-12	DIODE RD9.1EW-T1

JACK

J4221	1-770-361-11	TERMINAL BLOCK, S

RESISTOR

R4206	1-249-425-11	CARBON	4.7K	5%	1/4W
R4207	1-247-895-91	CARBON	470K	5%	1/4W

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REF.NO.	PART NO.	DESCRIPTION	REMARK		
R4208	1-247-895-91	CARBON	470K	5%	1/4W
R4209	1-249-425-11	CARBON	4.7K	5%	1/4W
R4210	1-249-419-11	CARBON	1.5K	5%	1/4W
R4211	1-249-421-11	CARBON	2.2K	5%	1/4W
R4212	1-249-427-11	CARBON	6.8K	5%	1/4W

SWITCH

S4217	1-762-196-21	SWITCH, TACTILE			
S4218	1-762-196-21	SWITCH, TACTILE			
S4219	1-762-196-21	SWITCH, TACTILE			
S4220	1-762-196-21	SWITCH, TACTILE			

HB

*	A-1372-826-A	HB (VAR) MOUNTED PC BOARD (ALL EXCEPT KV-32FS12/32FS16)			

CAPACITOR

C4050	1-104-665-11	ELECT	100µF	20%	25V

CONNECTOR

CN4050*	1-564-520-11	PLUG, CONNECTOR 5P			

DIODE

D4051	8-719-057-09	DIODE LNJ801LPDJA			

IC

IC4050	8-742-211-20	HYB IC SBX3071-71			

RESISTOR

R4050	1-249-401-11	CARBON	47	5%	1/4W
R4051	1-249-417-11	CARBON	1K	5%	1/4W

HX

*	A-1372-817-A	HX MOUNTED PC BOARD			

CONNECTOR

CN4001		1-564-518-11	PLUG, CONNECTOR 3P		

REF.NO.	PART NO.	DESCRIPTION	REMARK		

RESISTOR

R4001	1-216-025-91	RES-CHIP	100	5%	1/10W
R4002	1-216-045-00	RES-CHIP	680	5%	1/10W
R4003	1-216-047-91	RES-CHIP	820	5%	1/10W
R4004	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R4005	1-216-069-00	RES-CHIP	6.8K	5%	1/10W

SWITCH

S4001	1-762-196-21	SWITCH, TACTILE			
S4002	1-762-196-21	SWITCH, TACTILE			
S4003	1-762-196-21	SWITCH, TACTILE			
S4004	1-762-196-21	SWITCH, TACTILE			
S4005	1-762-196-21	SWITCH, TACTILE			
S4006	1-762-196-21	SWITCH, TACTILE			

K

*	A-1380-633-A	K (VAR) MOUNTED PC BOARD (KV-27FV16/29FV16/29FV16C ONLY)			
*	A-1380-632-A	K (VAR) MOUNTED PC BOARD (KV-32FS12/32FS16 ONLY)			

CAPACITOR

C201	1-126-963-11	ELECT	4.7µF	20%	50V
C202	1-126-963-11	ELECT	4.7µF	20%	50V
C404	1-164-182-11	CERAMIC CHIP	0.0033µF	10%	50V
C405	1-163-034-00	CERAMIC CHIP	0.033µF		50V
C406	1-163-011-11	CERAMIC CHIP	0.0015µF	10%	50V
C407	1-164-222-11	CERAMIC CHIP	0.22µF		25V
C408	1-164-222-11	CERAMIC CHIP	0.22µF		25V
C409	1-163-011-11	CERAMIC CHIP	0.0015µF	10%	50V
C410	1-163-034-00	CERAMIC CHIP	0.033µF		50V
C411	1-164-182-11	CERAMIC CHIP	0.0033µF	10%	50V
C412	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C413	1-126-963-11	ELECT	4.7µF	20%	50V
C414	1-126-963-11	ELECT	4.7µF	20%	50V
C415	1-126-963-11	ELECT	4.7µF	20%	50V
C416	1-126-963-11	ELECT	4.7µF	20%	50V
C417	1-126-963-11	ELECT	4.7µF	20%	50V
C418	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C419	1-164-346-11	CERAMIC CHIP	1µF		16V
C422	1-126-963-11	ELECT	4.7µF	20%	50V
C423	1-126-963-11	ELECT	4.7µF	20%	50V
C424	1-164-005-11	CERAMIC CHIP (KV-27FV16/29FV16/29FV16C ONLY)	0.47µF		25V
C425	1-164-346-11	CERAMIC CHIP (KV-27FV16/29FV16/29FV16C ONLY)	1µF		16V

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REF.NO.	PART NO.	DESCRIPTION	REMARK		
C426	1-126-960-11	ELECT	1µF	20%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C427	1-126-968-11	ELECT	100µF	20%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C428	1-126-968-11	ELECT	100µF	20%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C429	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C430	1-164-222-11	CERAMIC CHIP	0.22µF		25V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C431	1-163-038-91	CERAMIC CHIP	0.1µF		25V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C432	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C433	1-164-346-11	CERAMIC CHIP	1µF		16V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C434	1-163-038-91	CERAMIC CHIP	0.1µF		25V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C440	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C441	1-126-968-11	ELECT	100µF	20%	50V
C442	1-216-295-91	SHORT			
C444	1-216-295-91	SHORT			
C446	1-126-933-11	ELECT	100µF	20%	16V
C447	1-126-961-11	ELECT	2.2µF	20%	50V
C448	1-126-961-11	ELECT	2.2µF	20%	50V
C450	1-126-963-11	ELECT	4.7µF	20%	50V
C451	1-126-963-11	ELECT	4.7µF	20%	50V
C455	1-164-005-11	CERAMIC CHIP	0.47µF		25V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C456	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C457	1-163-034-00	CERAMIC CHIP	0.033µF		50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C458	1-126-963-11	ELECT	4.7µF	20%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C460	1-126-963-11	ELECT	4.7µF	20%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C475	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C490	1-216-295-91	SHORT			

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION
CN402 *	1-564-506-11	PLUG, CONNECTOR 3P
CN450	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P

IC

REF.NO.	PART NO.	DESCRIPTION
IC403	8-759-658-19	IC NJM2198-TE2
		(KV-27FV16/29FV16/29FV16C ONLY)
IC404	8-759-658-01	IC NJW1130G-TE2

CHIP CONDUCTOR

REF.NO.	PART NO.	DESCRIPTION
JR403	1-216-295-91	SHORT
JR404	1-216-295-91	SHORT
JR420	1-216-295-91	SHORT
JR421	1-216-295-91	SHORT
JR422	1-216-295-91	SHORT
JR423	1-216-295-91	SHORT
JR425	1-216-295-91	SHORT
JR426	1-216-295-91	SHORT
JR427	1-216-295-91	SHORT
JR428	1-216-295-91	SHORT
JR429	1-216-295-91	SHORT
JR452	1-216-295-91	SHORT
JR474	1-216-295-91	SHORT
JR477	1-216-295-91	SHORT
JR491	1-216-295-91	SHORT

COIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
L410	1-414-271-11	INDUCTOR	47µH

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION
Q430	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q431	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q432	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q433	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX

RESISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R403	1-216-025-91	RES-CHIP	100	5%	1/10W
R404	1-216-025-91	RES-CHIP	100	5%	1/10W
R405	1-216-025-91	RES-CHIP	100	5%	1/10W
R407	1-216-025-91	RES-CHIP	100	5%	1/10W
R408	1-216-025-91	RES-CHIP	100	5%	1/10W
R409	1-216-025-91	RES-CHIP	100	5%	1/10W
R410	1-216-025-91	RES-CHIP	100	5%	1/10W
R431	1-216-073-00	RES-CHIP	10K	5%	1/10W
R432	1-216-073-00	RES-CHIP	10K	5%	1/10W
R433	1-216-073-00	RES-CHIP	10K	5%	1/10W
R434	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R435	1-216-033-00	RES-CHIP	220	5%	1/10W
R436	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R437	1-216-033-00	RES-CHIP	220	5%	1/10W
R438	1-216-033-00	RES-CHIP	220	5%	1/10W
R440	1-216-105-91	RES-CHIP	220K	5%	1/10W
R441	1-216-105-91	RES-CHIP	220K	5%	1/10W
R442	1-216-033-00	RES-CHIP	220	5%	1/10W
R443	1-216-105-91	RES-CHIP	220K	5%	1/10W
R444	1-216-105-91	RES-CHIP	220K	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R445	1-216-105-91	RES-CHIP	220K	5%	1/10W
R446	1-216-105-91	RES-CHIP	220K	5%	1/10W
R452	1-216-073-00	RES-CHIP	10K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R455	1-216-025-91	RES-CHIP	100	5%	1/10W
R456	1-216-025-91	RES-CHIP	100	5%	1/10W
R477	1-216-105-91	RES-CHIP	220K	5%	1/10W
R478	1-216-105-91	RES-CHIP	220K	5%	1/10W

MA

*	A-1304-202-A	MA (VAR) MOUNTED PC BOARD (KV-27FV16/29FV16/29FV16C ONLY)
*	A-1304-203-A	MA (VAR) MOUNTED PC BOARD (KV-32FS12 ONLY)
*	A-1304-196-A	MA (VAR) MOUNTED PC BOARD (KV-32FS16 ONLY)

CAPACITOR

REF.NO.	PART NO.	DESCRIPTION		REMARK	
C003	1-126-959-11	ELECT	0.47µF	20%	50V
C005	1-164-005-11	CERAMIC CHIP	0.47µF		25V
		(ALL EXCEPT KV-32FS12)			
C006	1-126-964-11	ELECT	10µF	20%	50V
C009	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C010	1-163-035-00	CERAMIC CHIP	0.047µF		50V
C011	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C012	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C015	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C016	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C017	1-126-960-11	ELECT	1µF	20%	50V
C019	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C020	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C021	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C022	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C027	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C028	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C032	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C033	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C034	1-163-037-11	CERAMIC CHIP	0.022µF	10%	50V
C037	1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C038	1-126-935-11	ELECT	470µF	20%	16V
C039	1-126-964-11	ELECT	10µF	20%	50V
C040	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C041	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C042	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C043	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C044	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V

REF.NO.	PART NO.	DESCRIPTION		REMARK	
C045	1-164-161-11	CERAMIC CHIP	0.0022µF	10%	50V
C046	1-104-664-11	ELECT	47µF	20%	25V
C047	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C048	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C051	1-126-935-11	ELECT	470µF	20%	16V
C060	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C062	1-126-959-11	ELECT	0.47µF	20%	50V
C063	1-137-194-81	MYLAR	0.47µF	5%	50V
C064	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
C070	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C071	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C076	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C077	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C091	1-163-037-11	CERAMIC CHIP	0.022µF	10%	50V
C093	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C097	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C099	1-126-960-11	ELECT	1µF	20%	50V
C151	1-126-960-11	ELECT	1µF	20%	50V
		(ALL EXCEPT KV-32FS12)			
C153	1-163-017-00	CERAMIC CHIP	0.0047µF	10%	50V
		(ALL EXCEPT KV-32FS12)			
C154	1-126-967-11	ELECT	47µF	20%	50V
		(ALL EXCEPT KV-32FS12)			
C155	1-126-964-11	ELECT	10µF	20%	50V
		(ALL EXCEPT KV-32FS12)			
C156	1-104-664-11	ELECT	47µF	20%	25V
		(ALL EXCEPT KV-32FS12)			
C157	1-126-968-11	ELECT	100µF	20%	50V
		(ALL EXCEPT KV-32FS12)			
C302	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C303	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C304	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C305	1-126-933-11	ELECT	100µF	20%	16V
		(KV-32FS12/32FS16 ONLY)			
C306	1-164-346-11	CERAMIC CHIP	1µF		16V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C307	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
		(KV-32FS12/32FS16 ONLY)			
C308	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C309	1-126-933-11	ELECT	100µF	20%	16V
		(KV-32FS12/32FS16 ONLY)			
C310	1-126-960-11	ELECT	1µF	20%	50V
C311	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
		(KV-32FS12/32FS16 ONLY)			
C312	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C313	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C314	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
		(KV-32FS12/32FS16 ONLY)			

MA

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
C315	1-104-664-11	ELECT	47µF	20%	25V
C316	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C317	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C318	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C319	1-126-767-11	ELECT	1000µF	20%	16V
C320	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C321	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C322	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C323	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C324	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
		(KV-32FS12/32FS16 ONLY)			
C325	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C326	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C328	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C329	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C330	1-126-960-11	ELECT	1µF	20%	50V
C331	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C332	1-163-010-11	CERAMIC CHIP	0.0012µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C334	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C335	1-126-963-11	ELECT	4.7µF	20%	50V
C336	1-104-664-11	ELECT	47µF	20%	25V
		(KV-32FS12/32FS16 ONLY)			
C338	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C339	1-126-960-11	ELECT	1µF	20%	50V
C340	1-126-933-11	ELECT	100µF	20%	16V
		(KV-32FS12/32FS16 ONLY)			
C341	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C345	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(ALL EXCEPT KV-32FS12)			
C346	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(ALL EXCEPT KV-32FS12)			
C347	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(ALL EXCEPT KV-32FS12)			
C348	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C350	1-126-959-11	ELECT	0.47µF	20%	50V
		(KV-32FS12/32FS16 ONLY)			
C351	1-163-021-91	CERAMIC	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C352	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C353	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C354	1-126-933-11	ELECT	100µF	20%	16V
		(KV-32FS12/32FS16 ONLY)			
C355	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C356	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C357	1-104-664-11	ELECT	47µF	20%	25V
C358	1-104-664-11	ELECT	47µF	20%	25V
C359	1-163-038-91	CERAMIC CHIP	0.1µF		25V

REF.NO.	PART NO.	DESCRIPTION		REMARK	
C360	1-126-959-11	ELECT	0.47µF	20%	50V
C361	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C362	1-104-664-11	ELECT	47µF	20%	25V
C363	1-163-038-91	CERAMIC CHIP	0.1µF		25V
C364	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C365	1-137-194-81	MYLAR	0.47µF	5%	50V
C366	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C367	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C368	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C369	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C370	1-126-933-11	ELECT	100µF	20%	16V
C371	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C377	1-126-963-11	ELECT	4.7µF	20%	50V
C380	1-163-021-91	CERAMIC CHIP	0.01UF	10%	50V
		(KV-32FS12 ONLY)			
C381	1-163-021-91	CERAMIC CHIP	0.01UF	10%	50V
		(KV-32FS12 ONLY)			
C382	1-163-021-91	CERAMIC CHIP	0.01UF	10%	50V
		(KV-32FS12 ONLY)			
C389	1-115-185-11	CERAMIC CHIP	0.033µF	10%	50V
		(KV-27FV16/29FV16/29FV16C ONLY)			
C389	1-104-760-11	CERAMIC CHIP	0.047UF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C390	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
		(KV-32FS12/32FS16 ONLY)			
C391	1-126-933-11	ELECT	100µF	20%	16V
		(KV-32FS12/32FS16 ONLY)			
C395	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
C396	1-164-004-11	CERAMIC CHIP	0.1µF	10%	25V
C397	1-163-021-91	CERAMIC CHIP	0.01µF	10%	50V
		(KV-32FS12/32FS16 ONLY)			
C398	1-126-964-11	ELECT	10µF	20%	50V
C451	1-164-346-11	CERAMIC CHIP	1µF		16V
		(ALL EXCEPT KV-32FS12)			
C452	1-164-346-11	CERAMIC CHIP	1µF		16V
		(ALL EXCEPT KV-32FS12)			
C453	1-164-346-11	CERAMIC CHIP	1µF		16V
		(ALL EXCEPT KV-32FS12)			
C454	1-164-346-11	CERAMIC CHIP	1µF		16V
		(ALL EXCEPT KV-32FS12)			

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION
CN001	1-764-334-11	PLUG, CONNECTOR 11P
		(KV-27FV16/29FV16/29FV16C ONLY)
CN001 *	1-564-511-11	PLUG, CONNECTOR 8P
		(KV-32FS12/32FS16 ONLY)
CN002 *	1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P
CN003 *	1-564-512-11	PLUG, CONNECTOR 9P

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REF.NO.	PART NO.	DESCRIPTION	REMARK
CN004 *	1-564-512-11	PLUG, CONNECTOR 9P	
CN005 *	1-764-333-11	PLUG, CONNECTOR 10P	
CN006 *	1-764-333-11	PLUG, CONNECTOR 10P	
CN302 *	1-564-507-11	PLUG, CONNECTOR 4P	
CN304 *	1-564-507-11	PLUG, CONNECTOR 4P (ALL EXCEPT KV-32FS12)	
CN305	1-573-298-21	CONNECTOR, BOARD TO BOARD 20P (ALL EXCEPT KV-32FS12)	
CN306 *	1-691-616-21	CONNECTOR, BOARD TO BOARD 15P (KV-27FV16/29FV16/29FV16C ONLY)	
CN309 *	1-564-506-11	PLUG, CONNECTOR 3P	
CN401 *	1-564-505-11	PLUG, CONNECTOR 2P (ALL EXCEPT KV-32FS12)	

DIODE

D001	8-719-976-99	DIODE UDZ-TE-17-5.1B	
D002	8-719-110-17	DIODE MTZJ-T-77-10B	
D003	8-719-073-01	DIODE MA111-TX	
D004	8-719-976-99	DIODE UDZ-TE-17-5.1B	
D005	8-719-109-89	DIODE MTZJ-T-77-5.6C	
D006	8-719-977-22	DIODE UDZ-TE-17-9.1B	
D075	8-719-073-01	DIODE MA111-TX	
D301	8-719-921-44	DIODE MTZJ-T-77-5.1C	
D303	8-719-991-33	DIODE 1SS133T-77 (ALL EXCEPT KV-32FS12)	
D304	8-719-981-99	DIODE MTZJ-T-77-3.3 (KV-27FV16/29FV16/29FV16C ONLY)	
D305	8-719-921-44	DIODE MTZJ-T-77-5.1C	
D360	8-719-914-44	DIODE DAP202K-T-146	

FERRITE BEAD

FB001	1-414-234-22	INDUCTOR CHIP	0µH
FB002	1-414-234-22	INDUCTOR CHIP	0µH
FB301	1-412-911-11	FERRITE (KV-32FS12/32FS16 ONLY)	0µH

FILTER

FL301	1-239-847-11	FILTER, LOW PASS (KV-32FS12/32FS16 ONLY)	
FL302	1-239-847-11	FILTER, LOW PASS (KV-32FS12/32FS16 ONLY)	
FL303	1-239-847-11	FILTER, LOW PASS (KV-32FS12/32FS16 ONLY)	

IC

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC001	8-759-680-52	IC M37280MK-111SP	
IC002	8-759-663-29	IC MM1476AF(TP)	
IC003	8-759-527-77	IC M24C16-MN6T	
IC301 ⚠	8-752-098-86	IC CXA2154S (ALL EXCEPT KV-32FS12)	
IC301 ⚠	8-752-094-98	IC CXA2154S (KV-32FS12 ONLY)	
IC302	8-759-655-75	IC TC90A49P (KV-32FS12/32FS16 ONLY)	

CHIP CONDUCTOR

JR001	1-216-295-91	SHORT	
JR002	1-216-295-91	SHORT	
JR003	1-216-295-91	SHORT	
JR005	1-216-295-91	SHORT	
JR006	1-216-295-91	SHORT	
JR007	1-216-295-91	SHORT	
JR008	1-216-295-91	SHORT	
JR010	1-216-295-91	SHORT	
JR011	1-216-295-91	SHORT	
JR090	1-216-295-91	SHORT	
JR100	1-216-295-91	SHORT	
JR101	1-216-295-91	SHORT	
JR296	1-216-295-91	SHORT	
JR297	1-216-295-91	SHORT	
JR298	1-216-295-91	SHORT	
JR350	1-216-295-91	SHORT	
JR378	1-216-295-91	SHORT	
JR379	1-216-295-91	SHORT	
JR399	1-216-295-91	SHORT	
JR401	1-216-295-91	SHORT	

COIL

L002	1-414-273-11	INDUCTOR	100µH
L003	1-414-273-11	INDUCTOR	100µH
L040	1-408-963-11	INDUCTOR	2.7µH
L150	1-414-267-11	INDUCTOR (ALL EXCEPT KV-32FS12)	10µH
L151	1-414-273-11	INDUCTOR (ALL EXCEPT KV-32FS12)	100µH
L301	1-414-267-11	INDUCTOR	10µH
L302	1-414-271-11	INDUCTOR	47µH
L303	1-414-856-11	INDUCTOR (KV-32FS12/32FS16 ONLY)	10µH
L304	1-414-856-11	INDUCTOR (KV-32FS12/32FS16 ONLY)	10µH
L305	1-414-267-11	INDUCTOR	10µH
L308	1-414-273-11	INDUCTOR	100µH
L310	1-414-273-11	INDUCTOR	100µH
L350	1-414-856-11	INDUCTOR (KV-32FS12/32FS16 ONLY)	10µH
L351	1-414-856-11	INDUCTOR (KV-32FS12/32FS16 ONLY)	10µH

MA

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REF.NO.	PART NO.	DESCRIPTION	REMARK
L356	1-216-296-91	SHORT (ALL EXCEPT KV-32FS12)	
L357	1-216-296-91	SHORT (ALL EXCEPT KV-32FS12)	

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q001	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q002	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q003	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q004	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q006	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q082	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q151	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (ALL EXCEPT KV-32FS12)	
Q152	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (ALL EXCEPT KV-32FS12)	
Q301	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q302	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q303	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q304	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q305	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q306	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q310	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q349	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q350	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q351	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q352	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q354	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q355	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q356	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q358	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q359	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q365	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q369	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q368	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q370	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-32FS12/32FS16 ONLY)	
Q375	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX	
Q378	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (ALL EXCEPT KV-32FS12)	
Q379	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q380	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX (KV-27FV16/29FV16/29FV16C ONLY)	
Q387	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q388	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	
Q389	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX	

RESISTOR

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R001	1-216-043-91	RES-CHIP	560	5%	1/10W
R002	1-216-041-00	RES-CHIP	470	5%	1/10W
R003	1-247-807-31	CARBON	100	5%	1/4W
R004	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R005	1-216-295-91	SHORT			
R006	1-216-025-91	RES-CHIP	100	5%	1/10W
R007	1-216-025-91	RES-CHIP	100	5%	1/10W
R008	1-216-049-91	RES-CHIP	1K	5%	1/10W
R009	1-216-121-91	RES-CHIP	1M	5%	1/10W
R010	1-216-033-00	RES-CHIP	220	5%	1/10W
R011	1-216-033-00	RES-CHIP	220	5%	1/10W
R012	1-216-045-00	RES-CHIP	680	5%	1/10W
R013	1-249-417-11	CARBON	1K	5%	1/4W
R014	1-216-073-00	RES-CHIP	10K	5%	1/10W
R015	1-216-073-00	RES-CHIP	10K	5%	1/10W
R016	1-216-041-00	RES-CHIP	470	5%	1/10W
R017	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R018	1-247-815-91	CARBON	220	5%	1/4W
R019	1-216-113-00	RES-CHIP	470K	5%	1/10W
R020	1-216-033-00	RES-CHIP	220	5%	1/10W
R021	1-249-429-11	CARBON	10K	5%	1/4W
R022	1-247-815-91	CARBON	220	5%	1/4W
R023	1-249-429-11	CARBON	10K	5%	1/4W
R024	1-247-815-91	CARBON	220	5%	1/4W
R025	1-249-426-11	CARBON	5.6K	5%	1/4W
R026	1-249-426-11	CARBON	5.6K	5%	1/4W
R027	1-249-426-11	CARBON	5.6K	5%	1/4W
R028	1-216-049-91	RES-CHIP	1K	5%	1/10W
R029	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R030	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R031	1-216-355-11	METAL OXIDE	3.3	5%	1W
R032	1-216-033-00	RES-CHIP	220	5%	1/10W
R033	1-216-033-00	RES-CHIP	220	5%	1/10W
R034	1-216-033-00	RES-CHIP	220	5%	1/10W
R035	1-216-033-00	RES-CHIP	220	5%	1/10W
R036	1-216-049-91	RES-CHIP	1K	5%	1/10W
R037	1-247-815-91	CARBON	220	5%	1/4W
R038	1-216-049-91	RES-CHIP	1K	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R039	1-216-045-00	RES-CHIP	680	5%	1/10W
R040	1-247-815-91	CARBON	220	5%	1/4W
R041	1-216-045-00	RES-CHIP	680	5%	1/10W
R042	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R043	1-249-417-11	CARBON	1K	5%	1/4W
R044	1-216-033-00	RES-CHIP	220	5%	1/10W
R045	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R046	1-216-033-00	RES-CHIP	220	5%	1/10W
R047	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R048	1-216-025-91	RES-CHIP	100	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R050	1-216-033-00	RES-CHIP	220	5%	1/10W
R051	1-216-033-00	RES-CHIP	220	5%	1/10W
R052	1-249-417-11	CARBON	1K	5%	1/4W
R054	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R055	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R056	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R057	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R058	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R060	1-247-815-91	CARBON	220	5%	1/4W
R061	1-216-033-00	RES-CHIP	220	5%	1/10W
R064	1-216-295-91	SHORT			
R069	1-247-815-91	CARBON	220	5%	1/4W
		(ALL EXCEPT KV-32FS12)			
R070	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R071	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R073	1-249-425-11	CARBON	4.7K	5%	1/4W
R074	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R077	1-216-097-91	RES-CHIP	100K	5%	1/10W
R085	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R086	1-216-045-00	RES-CHIP	680	5%	1/10W
R087	1-216-045-00	RES-CHIP	680	5%	1/10W
R088	1-216-045-00	RES-CHIP	680	5%	1/10W
R089	1-216-033-00	RES-CHIP	220	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R091	1-216-073-00	RES-CHIP	10K	5%	1/10W
R092	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R093	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R094	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R095	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R096	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R097	1-249-414-11	CARBON	560	5%	1/4W
R099	1-216-089-91	RES-CHIP	47K	5%	1/10W
R150	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R151	1-216-025-91	RES-CHIP	100	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R154	1-216-043-91	RES-CHIP	560	5%	1/10W
		(ALL EXCEPT KV-32FS12)			

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R155	1-216-043-91	RES-CHIP	560	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R156	1-216-085-00	RES-CHIP	33K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R157	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R158	1-216-025-91	RES-CHIP	100	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R159	1-216-025-91	RES-CHIP	100	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R251	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R253	1-216-049-91	RES-CHIP	1K	5%	1/10W
R256	1-216-073-00	RES-CHIP	10K	5%	1/10W
R257	1-216-049-91	RES-CHIP	1K	5%	1/10W
R258	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R259	1-249-429-11	CARBON	10K	5%	1/4W
R260	1-247-815-91	CARBON	220	5%	1/4W
R261	1-216-113-00	RES-CHIP	470K	5%	1/10W
R262	1-247-807-31	CARBON	100	5%	1/4W
R263	1-216-025-91	RES-CHIP	100	5%	1/10W
R264	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R266	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R267	1-216-049-91	RES-CHIP	1K	5%	1/10W
R268	1-216-045-00	RES-CHIP	680	5%	1/10W
R269	1-216-049-91	RES-CHIP	1K	5%	1/10W
R270	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R271	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R272	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R273	1-216-073-00	RES-CHIP	10K	5%	1/10W
R274	1-216-295-91	SHORT			
R275	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R276	1-216-085-00	RES-CHIP	33K	5%	1/10W
R277	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R277	1-216-133-00	RES-CHIP	3.3M	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R278	1-216-295-91	SHORT			
R279	1-247-807-31	CARBON	100	5%	1/4W
R280	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R281	1-208-798-11	METAL CHIP	4.7K	0.50%	1/10W
R282	1-208-790-11	METAL CHIP	2.2K	0.50%	1/10W
R283	1-216-689-11	RES-CHIP	39K	5%	1/10W
R284	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R285	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R286	1-216-089-91	RES-CHIP	47K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R287	1-216-097-91	RES-CHIP	100K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R288	1-216-041-00	RES-CHIP	470	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R289	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R290	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R291	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R298	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R299	1-216-033-00	RES-CHIP	220	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R300	1-216-295-91	SHORT			
		(KV-32FS12/32FS16 ONLY)			
R301	1-216-022-00	RES-CHIP	75	5%	1/10W
R303	1-216-073-00	RES-CHIP	10K	5%	1/10W
R304	1-247-807-31	CARBON	100	5%	1/4W
R305	1-216-295-91	SHORT			
		(KV-32FS12/32FS16 ONLY)			
R306	1-216-025-91	RES-CHIP	100	5%	1/10W
R307	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R308	1-216-022-00	RES-CHIP	75	5%	1/10W
R309	1-216-022-00	RES-CHIP	75	5%	1/10W
R310	1-249-417-11	CARBON	1K	5%	1/4W
R311	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-216-049-91	RES-CHIP	1K	5%	1/10W
R314	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R315	1-216-022-00	RES-CHIP	75	5%	1/10W
R316	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R317	1-247-807-31	CARBON	100	5%	1/4W
		(KV-32FS12/32FS16 ONLY)			
R318	1-216-091-00	RES-CHIP	56K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R319	1-216-081-00	RES-CHIP	22K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R320	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R321	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R322	1-216-025-91	RES-CHIP	100	5%	1/10W
R323	1-216-025-91	RES-CHIP	100	5%	1/10W
R324	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R325	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R327	1-216-025-91	RES-CHIP	100	5%	1/10W
R328	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R329	1-216-025-91	RES-CHIP	100	5%	1/10W
R331	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R332	1-216-022-00	RES-CHIP	75	5%	1/10W
R333	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R334	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R335	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R336	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R337	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R338	1-216-073-00	RES-CHIP	10K	5%	1/10W
R339	1-216-091-00	RES-CHIP	56K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R340	1-216-025-91	RES-CHIP	100	5%	1/10W
R341	1-216-089-91	RES-CHIP	47K	5%	1/10W
R342	1-216-049-91	RES-CHIP	1K	5%	1/10W
R343	1-216-097-91	RES-CHIP	100K	5%	1/10W
R344	1-216-295-91	SHORT			
R345	1-216-097-91	RES-CHIP	100K	5%	1/10W
R346	1-216-097-91	RES-CHIP	100K	5%	1/10W
R347	1-216-025-91	RES-CHIP	100	5%	1/10W
R348	1-216-022-00	RES-CHIP	75	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R349	1-216-025-91	RES-CHIP	100	5%	1/10W
R350	1-216-022-00	RES-CHIP	75	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R351	1-216-041-00	RES-CHIP	470	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R352	1-247-807-31	CARBON	100	5%	1/4W
		(KV-32FS12/32FS16 ONLY)			
R353	1-247-807-31	CARBON	100	5%	1/4W
		(KV-32FS12/32FS16 ONLY)			
R354	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R355	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R356	1-216-025-91	RES-CHIP	100	5%	1/10W
R357	1-216-022-00	RES-CHIP	75	5%	1/10W
R358	1-216-093-91	RES-CHIP	68K	5%	1/10W
R359	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R360	1-216-093-91	RES-CHIP	68K	5%	1/10W
R361	1-216-022-00	RES-CHIP	75	5%	1/10W
R362	1-216-035-00	RES-CHIP	270	5%	1/10W
R363	1-216-039-00	RES-CHIP	390	5%	1/10W

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REF.NO.	PART NO.	DESCRIPTION		REMARK	
R364	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R365	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R366	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R367	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R368	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R369	1-216-033-00	RES-CHIP	220	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R370	1-249-429-11	CARBON	10K	5%	1/4W
R372	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R373	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R374	1-216-025-91	RES-CHIP	100	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R375	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R376	1-216-022-00	RES-CHIP	75	5%	1/10W
R377	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R378	1-216-295-91	SHORT			
		(KV-32FS12/32FS16 ONLY)			
R379	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R380	1-216-295-91	SHORT			
		(KV-27FV16/29FV16/29FV16C ONLY)			
R381	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R382	1-216-295-91	SHORT			
R383	1-216-295-91	SHORT			
R384	1-216-295-91	SHORT			
R387	1-216-025-91	RES-CHIP	100	5%	1/10W
R386	1-216-047-91	RES-CHIP	820	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R388	1-216-025-91	RES-CHIP	100	5%	1/10W
R389	1-216-049-91	RES-CHIP	1K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R392	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R394	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R395	1-216-043-91	RES-CHIP	560	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R396	1-247-807-31	CARBON	100	5%	1/4W
		(KV-32FS12/32FS16 ONLY)			
R398	1-216-091-00	RES-CHIP	56K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			

REF.NO.	PART NO.	DESCRIPTION		REMARK	
R398	1-216-109-00	RES-CHIP	330K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R399	1-216-109-00	RES-CHIP	330K	5%	1/10W
		(KV-27FV16/29FV16/29FV16C ONLY)			
R399	1-216-689-11	RES-CHIP	39K	5%	1/10W
		(KV-32FS12/32FS16 ONLY)			
R434	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			
R435	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
		(ALL EXCEPT KV-32FS12)			

TUNER

TU150 ⚠	8-598-501-00	TUNER, FSS BTF-FA402
		(ALL EXCEPT KV-32FS12)

CRYSTAL

X001	1-767-487-11	VIBRATOR, CRYSTAL
X301	1-567-505-11	OSCILLATOR, CRYSTAL

P

*	A-1190-367-A	P MOUNTED PC BOARD
		(ALL EXCEPT KV-32FS12)

CAPACITOR

C3301	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3302	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3303	1-104-664-11	ELECT	47μF	20%	16V
C3304	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3305	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3306	1-163-038-91	CERAMIC CHIP	0.1μF		25V
C3308	1-164-005-11	CERAMIC CHIP	0.47μF		25V
C3309	1-163-034-00	CERAMIC CHIP	0.033μF		50V
C3310	1-164-222-11	CERAMIC CHIP	0.22μF		25V
C3311	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C3314	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3315	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3316	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C3317	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C3319	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C3320	1-164-005-11	CERAMIC CHIP	0.47μF		25V
C3321	1-163-009-11	CERAMIC CHIP	0.001μF	10%	50V
C3323	1-104-664-11	ELECT	47μF	20%	16V
C3324	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3325	1-163-031-11	CERAMIC CHIP	0.01μF		50V
C3326	1-104-664-11	ELECT	47μF	20%	16V

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REF.NO.	PART NO.	DESCRIPTION	REMARK		
C3327	1-104-664-11	ELECT	47µF	20%	16V
C3328	1-104-664-11	ELECT	47µF	20%	16V
C3330	1-126-964-11	ELECT	10µF	20%	50V
C3331	1-163-009-11	CERAMIC CHIP	0.001µF	10%	50V
C3332	1-164-346-11	CERAMIC CHIP	1µF		16V
C3333	1-164-346-11	CERAMIC CHIP	1µF		16V
C3334	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C3335	1-164-182-11	CERAMIC CHIP	0.0033µF	10%	50V
C3336	1-163-031-11	CERAMIC CHIP	0.01µF		50V
C3339	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C3340	1-126-967-11	ELECT	47µF	20%	50V
C3341	1-164-222-11	CERAMIC CHIP	0.22µF		25V
C3342	1-163-037-11	CERAMIC CHIP	0.022µF	10%	50V
C3343	1-126-967-11	ELECT	47µF	20%	50V
C3344	1-164-222-11	CERAMIC CHIP	0.22µF		25V
C3345	1-164-346-11	CERAMIC CHIP	1µF		16V
C3346	1-164-346-11	CERAMIC CHIP	1µF		16V
C3347	1-164-346-11	CERAMIC CHIP	1µF		16V
C3349	1-164-005-11	CERAMIC CHIP	0.47µF		25V
C3350	1-163-233-11	CERAMIC CHIP	18PF	5%	50V
C3351	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C3352	1-164-222-11	CERAMIC CHIP	0.22µF		25V
C3353	1-126-967-11	ELECT	47µF	20%	50V
C3354	1-163-037-11	CERAMIC CHIP	0.022µF	10%	50V
C3355	1-164-346-11	CERAMIC CHIP	1µF		16V
C3356	1-164-346-11	CERAMIC CHIP	1µF		16V
C3357	1-164-346-11	CERAMIC CHIP	1µF		16V

CONNECTOR

CN3300	1-573-301-21	CONNECTOR, BOARD TO BOARD 20P

DIODE

D3301	8-719-073-01	DIODE MA111-TX
D3304	8-719-422-12	DIODE UDZ-TE-17-3.9B

IC

IC3300	8-759-353-00	IC NJM2534M(TE2)
IC3301	8-759-660-74	IC M65664FP-DS60S
IC3302	8-759-458-18	IC TDA8501T

COIL

L3300	1-414-267-11	INDUCTOR	10µH
L3301	1-410-682-31	INDUCTOR	470µH
L3302	1-414-267-11	INDUCTOR	10µH
L3303	1-414-267-11	INDUCTOR	10µH
L3304	1-414-267-11	INDUCTOR	10µH

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION
Q3300	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3301	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3302	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3304	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3305	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3306	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3308	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3309	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3311	8-729-111-55	TRANSISTOR 2SD1292
Q3312	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3313	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3314	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3315	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3316	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3317	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3318	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3319	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3320	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX
Q3321	8-729-216-22	TRANSISTOR 2SB709A-QRS-TX
Q3323	8-729-422-27	TRANSISTOR 2SD601A-QRS-TX

RESISTOR

R3300	1-216-041-00	RES-CHIP	470	5%	1/10W
R3303	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3304	1-216-133-00	RES-CHIP	3.3M	5%	1/10W
R3305	1-216-037-00	RES-CHIP	330	5%	1/10W
R3308	1-216-085-00	RES-CHIP	33K	5%	1/10W
R3309	1-216-025-91	RES-CHIP	100	5%	1/10W
R3310	1-216-025-91	RES-CHIP	100	5%	1/10W
R3311	1-216-037-00	RES-CHIP	330	5%	1/10W
R3312	1-216-043-91	RES-CHIP	560	5%	1/10W
R3313	1-216-035-00	RES-CHIP	270	5%	1/10W
R3316	1-216-295-91	SHORT			
R3317	1-216-295-91	SHORT			
R3318	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R3319	1-216-295-91	SHORT			
R3320	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3321	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3322	1-216-091-00	RES-CHIP	56K	5%	1/10W
R3323	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3324	1-216-033-00	RES-CHIP	220	5%	1/10W
R3325	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3328	1-216-295-91	SHORT			
R3329	1-216-033-00	RES-CHIP	220	5%	1/10W
R3333	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3334	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3335	1-216-049-91	RES-CHIP	1K	5%	1/10W

Note:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R3336	1-216-295-91	SHORT			
R3338	1-216-295-91	SHORT			
R3340	1-216-295-91	SHORT			
R3341	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3342	1-216-295-91	SHORT			
R3343	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R3344	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3345	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3346	1-216-045-00	RES-CHIP	680	5%	1/10W
R3347	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3349	1-215-857-11	METAL OXIDE	10	5%	1W
R3350	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3351	1-216-041-00	RES-CHIP	470	5%	1/10W
R3355	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3356	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3357	1-216-041-00	RES-CHIP	470	5%	1/10W
R3358	1-216-689-11	RES-CHIP	39K	5%	1/10W
R3359	1-216-113-00	RES-CHIP	470K	5%	1/10W
R3360	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R3361	1-216-045-00	RES-CHIP	680	5%	1/10W
R3365	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3366	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3367	1-216-073-00	RES-CHIP	10K	5%	1/10W
R3368	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3369	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3370	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3371	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3372	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3373	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3374	1-216-025-91	RES-CHIP	100	5%	1/10W
R3375	1-216-025-91	RES-CHIP	100	5%	1/10W
R3376	1-216-025-91	RES-CHIP	100	5%	1/10W
R3377	1-216-041-00	RES-CHIP	470	5%	1/10W
R3378	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3379	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3380	1-216-043-91	RES-CHIP	560	5%	1/10W
R3381	1-216-041-00	RES-CHIP	470	5%	1/10W
R3382	1-216-043-91	RES-CHIP	560	5%	1/10W
R3383	1-216-041-00	RES-CHIP	470	5%	1/10W
R3384	1-216-045-00	RES-CHIP	680	5%	1/10W
R3385	1-216-043-91	RES-CHIP	560	5%	1/10W
R3386	1-216-041-00	RES-CHIP	470	5%	1/10W
R3387	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3388	1-216-049-91	RES-CHIP	1K	5%	1/10W
R3392	1-208-834-11	METAL CHIP	150K	0.50%	1/10W
R3393	1-216-295-91	SHORT			
R3395	1-216-689-11	RES-CHIP	39K	5%	1/10W
R3396	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3397	1-216-025-91	RES-CHIP	100	5%	1/10W
R3398	1-216-047-91	RES-CHIP	820	5%	1/10W
R3399	1-216-045-00	RES-CHIP	680	5%	1/10W
R3400	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3401	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3402	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3403	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3404	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3405	1-216-089-91	RES-CHIP	47K	5%	1/10W

CRYSTAL

X3300	1-567-505-11	OSCILLATOR, CRYSTAL
X3301	1-781-377-11	VIBRATOR, CRYSTAL

VA

*	A-1342-550-A	VA (VAR) MOUNTED PC BOARD (KV-27FV16/29FV16/29FV16C ONLY)
*	A-1342-549-A	VA (VAR) MOUNTED PC BOARD (KV-32FS12/32FS16 ONLY)
	4-382-854-11	SCREW (M3X10), P, SW (+)

CAPACITOR

C805	1-129-763-00	FILM (KV-27FV16/29FV16/29FV16C ONLY)	0.033µF	5%	200V
C805	1-136-601-11	FILM (KV-32FS12/32FS16 ONLY)	0.01UF	5%	630V
C811	1-129-765-00	FILM (KV-27FV16/29FV16/29FV16C ONLY)	0.047µF	5%	200V
C811	1-129-768-51	FILM (KV-32FS12/32FS16 ONLY)	0.082µF	5%	200V
C901	1-107-667-11	ELECT	2.2µF	20%	160V
C902	1-130-491-00	MYLAR	0.047µF	5%	50V
C903	1-126-925-11	ELECT	470µF	20%	10V
C904	1-130-471-00	MYLAR	0.001µF	5%	50V
C905	1-106-383-00	MYLAR	0.047µF	10%	200V
C906	1-130-471-00	MYLAR	0.001µF	5%	50V
C907	1-107-638-11	ELECT	33µF	20%	160V
C908	1-126-925-11	ELECT	470µF	20%	10V
C909	1-161-830-00	CERAMIC	0.0047µF		500V
C910	1-104-999-11	MYLAR	0.1µF	10%	200V
C911	1-104-665-11	ELECT	100µF	20%	10V
C912	1-126-941-11	ELECT	470µF	20%	25V
C913	1-102-074-00	CERAMIC	0.001µF	10%	50V
C914	1-130-491-00	MYLAR	0.047µF	5%	50V

VA

Note:

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Note:

Les composants identifies per un trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

CONNECTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN901 *	1-564-508-11	PLUG, CONNECTOR 5P	
CN902 *	1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN904 *	1-564-507-11	PLUG, CONNECTOR 4P	

DIODE

REF.NO.	PART NO.	DESCRIPTION
D804	8-719-302-43	DIODE RGP10GPKG23
D805	8-719-991-33	DIODE 1SS133T-77
D806	8-719-991-33	DIODE 1SS133T-77
D807	8-719-210-21	DIODE ERA82-004TP5
D901	8-719-110-88	DIODE MTZJ-T-77-39
D902	8-719-110-88	DIODE MTZJ-T-77-39
D903	8-719-991-33	DIODE 1SS133T-77

COIL

REF.NO.	PART NO.	DESCRIPTION	REMARK
L801	1-406-989-21	INDUCTOR	10mH
L802	1-459-111-00	INDUCTOR	10mH
L901	1-412-528-11	INDUCTOR	18µH

TRANSISTOR

REF.NO.	PART NO.	DESCRIPTION
Q807	8-729-931-45	TRANSISTOR IRF614
Q808	8-729-140-97	TRANSISTOR 2SB734-T-34
Q901	8-729-017-06	TRANSISTOR 2SC4793
Q902	8-729-017-05	TRANSISTOR 2SA1837
Q903	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA
Q904	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA
Q905	8-729-119-76	TRANSISTOR 2SA1309A-QRSTA
Q906	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA

RESISTOR

REF.NO.	PART NO.	DESCRIPTION	REMARK		
R818	1-216-025-91	RES-CHIP	100	5%	1/10W
R826	1-249-421-11	CARBON	2.2K	5%	1/4W
R876	1-216-049-91	RES-CHIP	1K	5%	1/10W
R901	1-249-401-11	CARBON	47	5%	1/4W
R902	1-249-386-11	CARBON	2.7	5%	1/4W
R903	1-249-414-11	CARBON	560	5%	1/4W
R904	1-249-432-11	CARBON	18K	5%	1/4W
R905	1-249-417-11	CARBON	1K	5%	1/4W
R906	1-249-432-11	CARBON	18K	5%	1/4W
R907	1-249-386-11	CARBON	2.7	5%	1/4W
R908	1-249-414-11	CARBON	560	5%	1/4W
R909	1-260-312-11	CARBON	47	5%	1/2W
R910	1-216-476-11	METAL OXIDE	180	5%	3W
R911	1-249-403-11	CARBON	68	5%	1/4W
R912	1-247-815-91	CARBON	220	5%	1/4W
R913	1-249-403-11	CARBON	68	5%	1/4W
R914	1-249-410-11	CARBON	270	5%	1/4W
R915	1-249-417-11	CARBON	1K	5%	1/4W
R916	1-249-417-11	CARBON	1K	5%	1/4W
R917	1-249-417-11	CARBON	1K	5%	1/4W
R918	1-247-807-31	CARBON	100	5%	1/4W
R919	1-247-807-31	CARBON	100	5%	1/4W
R920	1-249-416-11	CARBON	820	5%	1/4W
R921	1-249-429-11	CARBON	10K	5%	1/4W
R922	1-249-397-11	CARBON	22	5%	1/4W
R923	1-249-401-11	CARBON	47	5%	1/4W

ACCESSORIES AND PACKAGING

	PART NO.	DESCRIPTION
*	4-041-259-01	BAG, PROTECTION (KV-32FS12/32FS16 ONLY)
*	4-041-255-01	BAG, PROTECTION (KV-27FV16/29FV16/29FV16C ONLY)
*	4-073-714-01	CARTON, INDIVIDUAL (KV-32FS12/32FS16 ONLY)
*	4-075-524-01	CARTON, INDIVIDUAL (KV-29FV16/29FV16C ONLY)
*	4-075-517-01	CARTON, INDIVIDUAL (KV-27FV16 ONLY)
*	4-075-515-01	CUSHION ASSY, UPPER (KV-27FV16/29FV16/29FV16C ONLY)
*	4-075-516-01	CUSHION ASSY, LOWER (KV-27FV16/29FV16/29FV16C ONLY)
*	4-073-715-01	CUSHION ASSY, UPPER (KV-32FS12/32FS16 ONLY)
*	4-073-716-01	CUSHION ASSY, LOWER (KV-32FS12/32FS16 ONLY)
	4-075-499-41	MANUAL, INSTRUCTION (KV-29FV16/29FV16C ONLY)
	4-075-499-21	MANUAL, INSTRUCTION (KV-27FV16/32FS12/32FS16 ONLY)

REMOTE COMMANDER

PART NO.	DESCRIPTION
1-418-496-11	REMOTE COMMANDER (RM-Y171) (KV-27FV16/29FV16/29FV16C ONLY)
1-418-387-11	REMOTE COMMANDER (RM-Y168) (KV-32FS12 ONLY)
1-418-384-11	REMOTE COMMANDER (RM-Y169) (KV-32FS16 ONLY)
4-978-977-01	BATTERY COVER (FOR RM-Y168/RM-Y169/RM-Y171)

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